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# The Journal of the American Medical Association

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## STUDIES IN HUMAN CONSTITUTION

### 1. CLINICAL ANTHROPOMETRY *


GEORGE DRAPER, M.D.
HALBERT L. DUNN, M.D.
AND
DAVID SEEGAL, M.D.
NEW YORK


Some conception of human constitution and diathesis is found in medical literature from the earliest times. Many attempts have been made to evaluate this important factor in disease production, and through the centuries there has been a rhythmic rise and fall of interest in the elusive subject. Just now we are in a strongly rising wave of enthusiasm for it. Doubtless, various causes combine to produce the wave at this particular epoch in the history of medicine, but a discussion of these influences, interesting though they may be, cannot be made here. However, as part of the present general movement, we have been carrying on for the last five or six years, at the Presbyterian Hospital, a systematic study of human constitution. This paper is the first of a series of articles from the Constitution Clinic of the Presbyterian Hospital, and deals with a method for studying one phase of the subject.

Constitution, in the sense we have felt it, is that aggregate of hereditarial characters, influenced more or less by environment, which determines the individual's reaction, successful or unsuccessful, to the stress of environment. Obviously, the "characters" referred to are infinite in number and variety so that some sort of grouping for simplification has been necessary. We have chosen for this grouping four main categories: morphology, physiology, psychology and immunity, referred to elsewhere as the "four panels of personality." [1] By correlation of the characters forming each panel in the case of a given individual, a surprisingly helpful plan is developed for the study and evaluation of that individual's constitution or total personality.

Furthermore, we have found that if the four panels of personality are studied and correlated in each person of a large number of individuals who are affected with the same disease, there appears frequent repetition of certain combinations of characters. These recurrences are so definite that from a careful analysis of a given anatomic panel, for example, it is possible to predicate with great correctness the nature of one or more of the other panels. On this basis undoubtedly has rested the unconscious skill of the older clinicians in what has been called "the clinical hunch." We have attempted to catch the "clinical hunch" in terms of numerical indexes.

The present brief preliminary report deals only with the study of morphology as applied to clinical medicine. We have in preparation a monograph, shortly to be published, which will present the subject more fully and correlate it with the literature. For the present, suffice it to say that we believe with Hunter,[2] Addison,[3] Laycock [4] and Hutchinson,[5] who wrote extensively on the subject of constitution, that this habitus, or physical form, of the individual bears an important relationship to disease. But we do not agree with di Giovanni [6] and his followers that a given morphology in itself predisposes to or actually causes disease. Rather do we consider that physical features express in the morphologic panel certain basic hereditarial influences. These forces, flowing down the ages through the germ plasm, are further displayed with equal emphasis and individuality in each of the other three panels, which, with the structural, are fused to form the human constitution.

There have been many attempts in the past to establish a correlation between types of human morphology and the success or failure of these types in the struggle for existence. The evidence of the outcome of this reaction between individual and environment is expressed in terms of health, physical disease, insanity, criminality and other less sharply defined inadequacies, both physical and mental. Students of each of these groups of reaction phenomena have from time to time drawn attention to the physical characteristics of their subjects, but have relied largely on observational and descriptive methods. Furthermore, in recent years the growing knowledge of the endocrine glands has rested to a great extent on the recognition and description of morphologic characteriastics, although it is true that, in a limited way, mensuration has been used. But the complete anthropometric technic of physical anthropology has, with the exception of the Italian school, led by di Giovanni, been neglected by students of clinical medicine. Obviously, if this method is adequate for satisfactory classification of human beings into racial groups on a morphologic basis, it should be equally applicable to the clinical problem that has engaged our interest. Assuming, then, as a point of departure that people with similar disease potentialities possess other remarkable and similar hereditarial characteristics, we have applied the technic of physical anthropology to study of the anatomic panel of constitution.


* From the Department of Medicine of the Columbia University College of Physicians and Surgeons, and the Presbyterian Hospital.


1. Draper, George: Diagnosis and Treatment, Endocrinology **3**: 164 (April-June) 1919.

2. Hunter, John: Essays and Observations on Natural History.
3. Addison, Thomas: Collection of the published writings, London, 1868.
4. Laycock, Thomas: Physiognomical Diagnosis, M. Times & Gaz. **1**: 1, 1862.
5. Hutchinson, Jonathan: The Pedigree of Disease, London, 1884.
6. Di Giovanni, A.: Clinical Commentaries Deduced from the Morphology of the Human Body (English Edition), London, 1909.

Now, in approaching a new subject or some new phase of an old one, it may be necessary to devise entirely new technic. It is far easier, however, to change the angle from which one views a problem than it is to modify an existing technic. Such imponderable

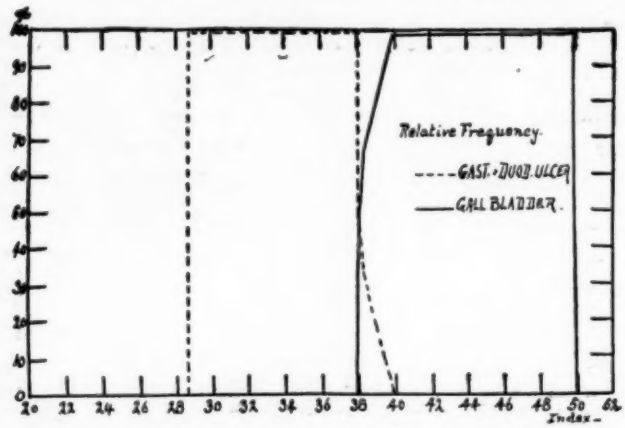


Fig. 1.—Ponderal index (males): up to index 28.7, neither gallbladder nor ulcer; from 28.7 to 38.0, 100 per cent. ulcer; from 38.0 to 40.0, overlapping, either gallbladder or ulcer; from 40.0 to 50.0, 100 per cent. gallbladder; 50.0 and above, neither gallbladder nor ulcer; number of cases: gallbladder, sixteen; ulcer, twenty-three.

things as mental concepts are more easily shifted about than are the materials and machines that we use to analyze and prove them. But there are certain general principles of logical thought process that have been followed by inquiring minds ever since man began to study the world about him. Perhaps the most fundamental of these is the principle of comparisons. In medicine, which deals with deflections from a more or less arbitrarily defined average or normal, the comparative method has two main modes of application. The first depends on finding or establishing a satisfactory normal or constant standard against which to measure the subject under investigation. The second, failing a standard, draws comparisons between different groups. Such groups are composed of individuals, who, though perhaps not identical, possess a sufficient number of remarkable, similar characteristics to make it obvious that they form a type or race. The characteristics that mark one group may differ from those of another group with the same degree of sharpness that the skin of a negro does from that of an Anglo-Saxon.

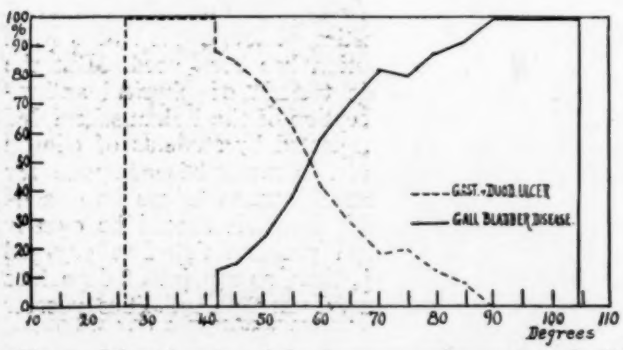


Fig. 2.—Subcostal angle: relative frequency, males: up to angle 26.3 degrees, neither gallbladder nor ulcer; from 26.3 to 42.0, 100 per cent. ulcer; from 42.0 to 90.0, overlapping, either gallbladder or ulcer; from 90.0 to 105.0, 100 per cent. gallbladder; Angle 105.0 and above, neither gallbladder nor ulcer; number of cases: gallbladder, sixteen; ulcer thirty.

Botanists, bacteriologists, zoologists and anthropologists use this method of intergroup comparison in their classifications of all forms of life. The clinician, too, has used this system, but has applied it to the classification of pathologic processes or disease entities. The latter are simply collections of remarkable and similar characteristics which physicians call symptoms. Races are merely groups whose individual members possess remarkable and similar characteristics, which anthropologists call traits.

As a result of these considerations and encouraged by certain observations made on the human types found in recent extensive epidemics of infantile paralysis and meningitis, as well as of other types repeatedly seen suffering from such well recognized disease entities as pernicious anemia, cerebrospinal syphilis, gastric ulcer and gallbladder disease, it seemed not without promise to attempt an organized investigation of the nature of man's constitution in relation to disease. But we have made no attempt to add still another classification of human types. For the time being we have preferred to look on the different anthropometric formulas associated with each disease merely as another purely clinical means of aiding in diagnosis, and perhaps also as a move in the direction of preventive medicine for the individual.

In this article we present a method for the application of anthropologic technic to clinical medicine. This method is applicable alike to the study of race, endocrinopathic states, or to any disease entity. Obviously, the foregoing sentence recalls the definition

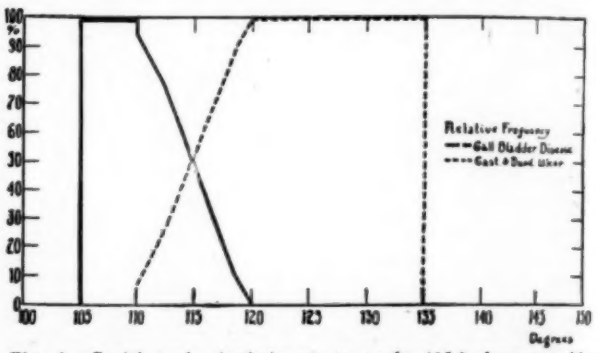


Fig. 3.—Gonial angle (males): up to angle 105.0 degrees, neither gallbladder nor ulcer; from 105.0 to 110.0, 100 per cent. gallbladder; from 110.0 to 120.0, overlapping, either gallbladder or ulcer; from 120.0 to 135.0, 100 per cent. ulcer; angle 135.0 and above, neither gallbladder nor ulcer; number of cases: gallbladder, seventeen; ulcer, thirty.

of race. Does it not, perhaps, from the morphologic standpoint represent merely a group of individuals possessing points of anatomic similarity? By the same token any other series of constant similarities, whether physiologic, psychologic or immunologic, might as justifiably be used as proper criteria of racial entity. One might conceive, therefore, as well of a gastric atony race, a manic-depressive race, a meningococcus susceptible race, as of the present customarily accepted black, yellow or white divisions of mankind.

In adapting the methods of physical anthropology to the demands of clinical medicine, recognition must be given to the fact that excellent osteometric and anthropometric methods have been developed, for application either to skeletal material or to healthy living specimens.

The technic of anthropometry, recording and analysis of data that we have used is based largely on the work of Hrdlicka,[7] Wilder,[8] Quetelet,[9] Broca,[10] Topinard,[11]

7. Hrdlicka, A.: Anthropometry, Philadelphia, 1920.
8. Wilder, H. H.: A Laboratory Manual of Anthropometry, Philadelphia, 1920.
9. Quetelet, A.: Anthropometrie de l'homme, Brussels, 1871.
10. Broca, P. P.: Memoirs de l'anthropologie, Paris, 1871.
11. Topinard, Paul: L'anthropologie, Paris, 1876.

Sergi,[12] di Giovanni, Martin,[13] Viola and Keith.[14] In addition, we have devised certain new methods, especially for study of the palate, jaws and teeth. Furthermore, we have been forced to make certain modifications of existing technics to meet the demands entailed by the measurement of severely ill bed patients. A full description of the instruments and technic will be found in the monograph now in course of preparation.

For this preliminary report we propose to present a few examples of certain anatomic characters which have been found to differ with surprising consistency in the two disease entities of gallbladder disease and ulcer of the stomach or duodenum.

The material on which this set of observations has been made consists of fifty patients with gallbladder disease, and thirty-nine with gastric and duodenal ulcer. The diagnosis in all the cases was proved at operation. The average age of the patients was the accepted typical one for each malady. Obviously, the factor of age, because of the stage of growth, is an important one in any general study of animal or plant morphology. But in the case of these two disease groups it is, of course, no longer an active one.

Complete anthropometric studies were made on each individual, involving about eighty-five separate measurements. From these, forty-two indexes were calculated. The results in each disease group have been

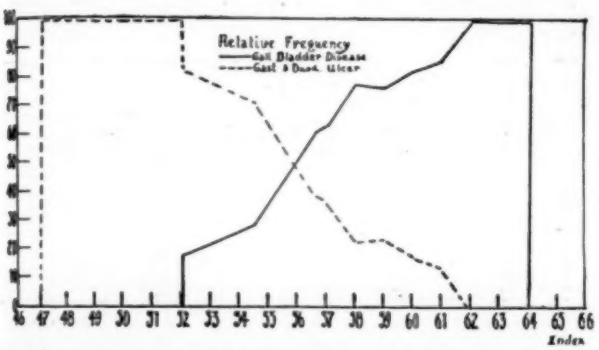


Fig. 4.—Anterior index of upper jaw (males): up to index 47, neither gallbladder nor ulcer; from 47 to 52, 100 per cent. ulcer; from 52 to 62, overlapping, either gallbladder or ulcer; from 62 to 64, 100 per cent. gallbladder; 64 and above, neither gallbladder nor ulcer; number of cases: gallbladder, eleven; ulcer, eighteen.

compared by means of curves which show the relative frequency of occurrence of differences in any given character.

The following anatomic characters have been selected for this demonstration:

1. Ponderal index: the relation of weight to height.
2. Subcostal angle: the angle of the diverging costal margins.
3. Gonial angle: the angle formed by the ascending and horizontal rami of the mandible.
4. Anterior jaw index: the relation of anterior jaw breadth to posterior jaw breadth.
5. Anteroposterior thoracic diameter: the depth of the chest at the level of the third rib.

Figure 1 shows the far higher ponderal index of the gallbladder people. Notwithstanding the obvious fact that ulcer people, owing to the nature of their malady, cannot eat adequately, and so cannot be particularly well nourished, still the difference in the ponderal index is so striking and so constant that it has real clinical significance.

12. Sergi, G.: L'Uomo, Turin, 1911.
13. Martin, Rudolf: Lehrbuch der Anthropologie, Jena, 1914.
14. Keith, Arthur, Man, New York, 1912.

Figure 2 shows the wider subcostal angle of the gallbladder individuals as compared with that of the ulcer.

Figure 3 makes it clear that the gallbladder people have a gonial angle which approaches a right angle, while the angle of ulcer people is much more obtuse.

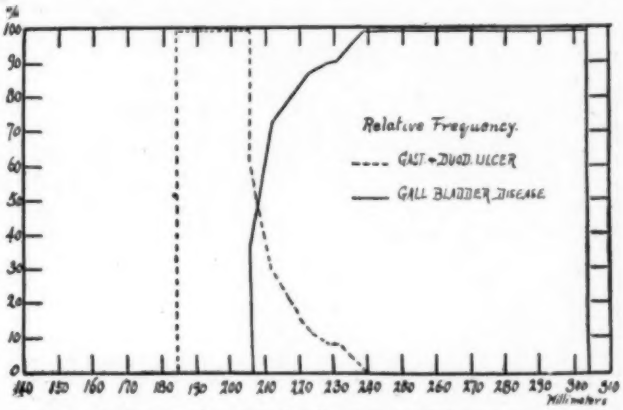


Fig. 5.—Anteroposterior thoracic diameter (males): up to 185 mm., neither gallbladder nor ulcer; from 185 to 206, 100 per cent. ulcer; from 206 to 240, overlapping, either gallbladder or ulcer; from 240 to 305, 100 per cent. gallbladder; 305 and above, neither gallbladder nor ulcer; number of cases: gallbladder, sixteen; ulcer, thirty.

Figure 5 makes it obvious that the chest depth of gallbladder people is much greater than that of ulcer people.

Figure 4 shows that the upper jaw of gallbladder people is definitely wider and squarer in its anterior portion than is the jaw of ulcer people.

Now, while all the characters here reported have been expressed in numerical values, there are certain other interesting features about the teeth and jaws which at present can only be noted by observation and description. In addition to the much squarer line of the incisor group in gallbladder people (Fig. 6), their teeth are shorter, broader and stockier than those of ulcer people. Furthermore, the teeth of the former are apt to be worn on the biting edge and to hang vertically or in lingual version (Fig. 7), and the lateral incisors are almost if not quite as broad as the central incisors.

Fig. 6.—Anterior view of upper jaw: *A*, ulcer; curving occlusion line and lateral incisors smaller than centrals; *B*, gallbladder; straight occlusion; central and lateral incisors more nearly equal in size.

There is, of course, nothing absolute about the morphologic characters of any living form, so that certain overlappings between the different groups not infrequently appear. These convergences are indicated with reasonable precision by the crossing or diverging of the curves. The lack of absolutism, however, does not prohibit a rather surprising consistency in the findings. We have found, for instance, that if an individual of one group presents in one character a value that is common to people of another group, he may show

appropriate values for his own group in other characters. Thus, by giving percentage values to each character, as in the accompanying table, we find that, although one or two may fall outside, the total percentage clearly indicates a tendency toward one group or another. For example, in Case 2, in which the patient had duodenal ulcer, there is a borderline ponderal index of only 50 per cent. probability; but examination of the gonial angle, subcostal angle, jaw index and anteroposterior thoracic diameter shows a probability of 79 per cent. in favor of ulcer as a diagnosis. In only one instance (Case 6) in the entire group of sixteen borderline cases was a false diagnosis made by this relative percentage method. Obviously, then, the net tendency of the anthropometric findings in all borderline cases of ulcer and gallbladder disease makes possible a correct diagnosis in at least 90 per cent. of the cases. This result is obtained by consideration of the anatomic panel alone. It is quite possible that if also the physiologic, immunologic and psychologic panels could be investigated and given their appropriate diagnostic value, the final classification of borderline cases would be still more obvious.

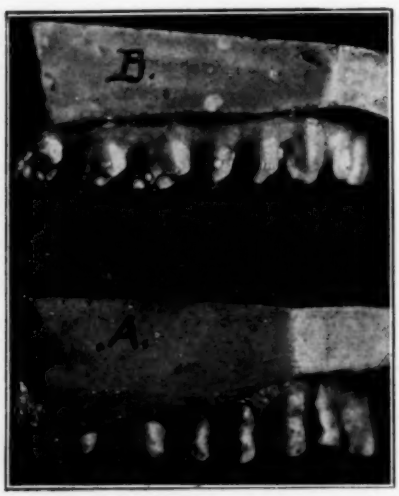


Fig. 7.—Lateral view of upper jaw: *A*, ulcer; labial version of incisors and curving occlusion; *B*, gallbladder; vertical or lingual version. Straight occlusion.

One other matter of interest has come to our attention; namely, the extreme accuracy with which the human eye detects slight differences of morphology. In fact, we can often observe with the eye small anatomic differences that escape the most carefully made linear measurements and their ratios. Doubtless, this greater sensitiveness of the eye depends on the fact that small differences in surface area or mass are more easily appreciated than are similar small differences between units of one linear dimension.

Fig. 8.—Palate view of upper jaw: *A*, ulcer; pointed incisor arch, deep palate, forward slanting incisors; *B*, gallbladder; flat incisor arch, shallow palate, vertical insertion of incisors.

Obviously, a study of the morphology alone, even by methods as precise as those here reported, cannot serve as more than a part of a complete study of the shifting complexities of human constitution. But that conformation, or habitus, provides most important information is beyond question. We have felt that anthropometry offered the best method of approach to the anatomic panel of personality, and that this panel was the natural one to attack first. The success, however, of any system for constitution study depends on the correlation of parallel studies of the other panels of physiology, immunology and psychology. Work is now in progress along these lines.

*Correlation of Relative Frequency Curves for the Diagnosis of Borderline Cases*

| Case No. | Postoperative Diagnosis | Differential Diagnosis Percentage Values * Ponderal Index | Subcostal Angle | Gonial Angle | Anterior Jaw Index | Antero-posterior Thoracic Diameter | Relative Total Percentage Diagnostic Value |
|---|---|---|---|---|---|---|---|
| 1 | Gallbladder | 50 (B) | 98 | 100 | 18 | 80 | 67.0 |
| 2 | Duodenal ulcer | 50 (B) | 66 | 100 | .. | 100 | 79.0 |
| 3 | Duodenal ulcer | 50 (B) | 100 | 65 | .. | 100 | 78.7 |
| 4 | Gallbladder | 100 | 46 (B) | 0 | .. | 91 | 59.8 |
| 5 | Duodenal ulcer | ... | 63 (B) | 100 | 37 | 9 | 52.2 |
| 6 | Duodenal ulcer | 0 | 63 (B) | 100 | 0 | 24 | 37.4 |
| 7 | Gastric ulcer | ... | 63 (B) | 64 | .. | 30 | 52.3 |
| 8 | Gallbladder | 100 | 54 (B) | 47 (B) | .. | 96 | 75.5 |
| 9 | Gallbladder | 100 | 100 | 47 (B) | .. | 100 | 86.7 |
| 10 | Gallbladder | 100 | 13 | 47 (B) | 77 | 100 | 58.3 |
| 11 | Duodenal ulcer | ... | 100 | 53 (B) | 48 (B) | 57 | 64.5 |
| 12 | Duodenal ulcer | 100 | 100 | 53 (B) | .. | 36 | 72.3 |
| 13 | Gallbladder | 100 | .. | 37 (B) | 63 (B) | .. | 66.6 |
| 14 | Gallbladder | 100 | 81 | 100 | .. | 50 (B) | 82.8 |
| 15 | Gallbladder | 100 | 69 | 0 | .. | 43 (B) | 53.1 |
| 16 | Gastric ulcer | 100 | 86 | 100 | 37 (B) | 100 (B) | 84.6 |
| Average gallbladder | | | | | | | 68.7 |
| Average ulcer | | | | | | | 65.1 |

* B denotes borderline measurement.

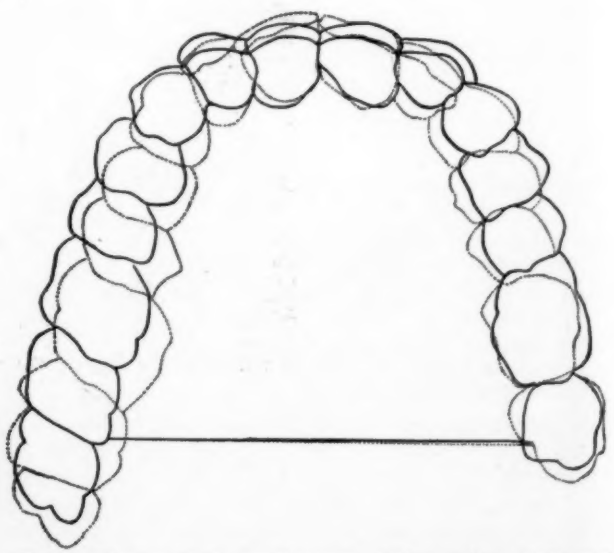

Fig. 9.—Diagram of the superimposed occlusion surfaces of the upper jaw, drawn to the same scale from photograph: Solid line, gallbladder; broken line, ulcer; there is narrower anterior breadth of the ulcer jaw.

A constitution clinic seems to hold a useful and logical place in any general medical clinic, for it tends to equalize the distribution of investigative energies on the three basic problems—man, the lesion, and the environmental stress.

**Indirect Infection a Factor in Tuberculosis.**—The indoor and direct contact hypotheses of tuberculous infection have been greatly overemphasized. They no doubt suffice in part. But there is every probability that outdoor, indirect infection—through sputum—makes up a large proportion of the total number; in children, perhaps, the greater part.—A. K. Krause: Rest and Other Things, p. 40.

# INSULIN AS AN INVESTMENT FOR THE PATIENT WITH DIABETES MELLITUS *

REGINALD FITZ, M.D.
AND
WILLIAM P. MURPHY, M.D.
BOSTON

A broad-minded physician conserves the money as well as the health of his patients; in a sense, he is a trustee both of their bodily welfare and of their finances. In other words, a physician is not justified in prevailing on sick people to go to a great expense for diagnostic tests or therapeutic procedures which are unnecessary or of theoretical interest; rather must he advise those measures which are as safe and certain as possible and which offer the prospect, through relieved symptoms, of a good return for the financial investment involved.

This point of view is particularly sound when applied to the insulin situation. Owing to its widespread publicity in the lay and medical press, physicians are constantly tempted by diabetic patients of all sorts to give their cases a trial with the new preparation. There is no doubt as to the efficiency of the remedy in many instances; on the other hand, not all diabetic patients require it. Furthermore, insulin has one serious objection in that it may be an expensive remedy to use over a long interval of time.

Therefore the practical question arises: Does insulin promise the average patient with diabetes sufficient gain in strength and efficiency with which to compensate for the expense entailed in buying the drug for an indefinite period and in learning how to use it through a course of hospital instruction? This question is of great importance to both physicians and patients. For, unless insulin more than pays its way in the long run for those who are advised to take it, it will not become popular, it will fall into disrepute, and other less expensive and perhaps less satisfactory methods of treatment will be substituted.

Striking clinical results have been published already to show what may occur in the treatment of diabetes with insulin. These publications, however, have merely touched on the expense of the treatment. During the last year we have followed a small group of typical cases treated at the Peter Bent Brigham Hospital in an endeavor to measure what insulin has accomplished for these patients in terms of dollars and cents. The result of this work is reported in this paper.

The material selected for this study consists of five cases chosen to represent the various types of severe diabetes most commonly seen in general practice. One patient was a boy of 13, another a boy of 16, and the others were men of 22, 36, and 48 years of age, respectively. All the patients were of good intelligence, anxious to live efficiently, and of moderate income so that the cost of treatment was, in each instance, a definite consideration.

We estimated the economic handicap of diabetes without insulin as well as possible from the individual case histories, using as a criterion the patients' earning capacity before they were given the drug, or their ability for school work and play in the case of the boys. We rated the cost of insulin at 3 cents a unit, which was the prevailing price of the drug in this country until recently. At the moment the cost of insulin is considerably less, so that our results practically double the present expensiveness of treatment. In one of the cases described, insulin was given by the government; for the purpose of this paper, however, the dollars' worth of insulin which the patient received each month was subtracted from his monthly income. Finally, we measured the effect of insulin on working ability in the case of the three adults and its effect on physical strength in all cases. For the latter purpose we made repeated strength tests by the spring-balance method of Lovett and Martin.[1] Our experiences with this method in measuring the results of treatment in diabetes will be described in another paper.

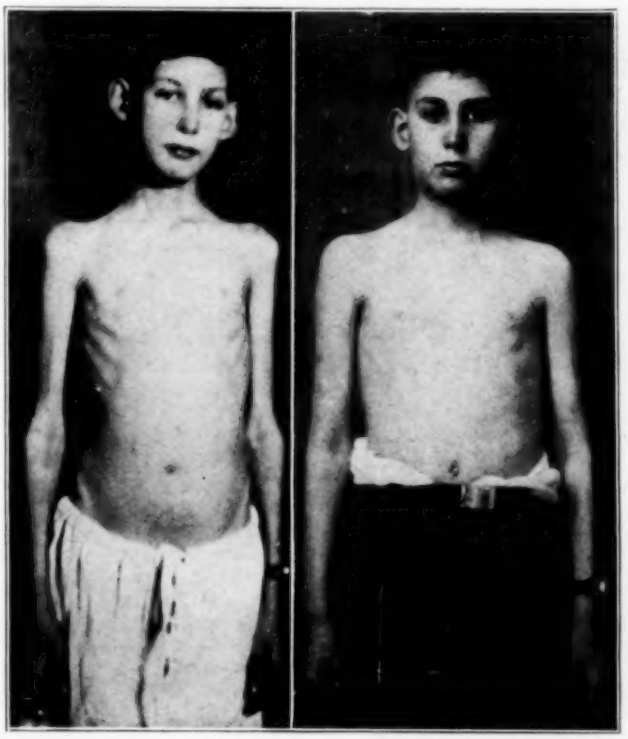

Fig. 1.—The patient before insulin was started, and after taking insulin for several months.

We will not discuss the method of diet control that was followed except to mention that each patient was discharged from the hospital on a low carbohydrate-high calory diet so balanced in its composition of glucose and fat as to check the formation of acetone bodies, and covered by sufficient insulin to control glycosuria. All the patients went through a period of hospitalization when they were taught how to administer insulin, how to test their own urine, and how to balance their diets. On discharge from the hospital, they continued treating themselves at home. One case was followed for two years, another for nearly a year, and two others for a period of several weeks without insulin so that the cost

* The insulin used by these patients was insulin-Lilly.

† From the Medical Clinic of the Peter Bent Brigham Hospital.

‡ Presented before the Suffolk District Medical Society, Boston, Dec. 19, 1923.

§ This paper is No. 10 of a series of studies in metabolism from the Medical School of Harvard University and allied hospitals. The expenses of this investigation have been defrayed (in part) by a grant from the Proctor Fund of the Medical School of Harvard University for the Study of Chronic Diseases.

1. Lovett, R. W., and Martin, E. G.: The Spring Balance Muscle Test, Am. J. Orthop. Surg. **14**: 415-424 (July) 1916.

of the disease without the new drug was fairly well estimated. The fifth case did not have a preliminary period of study on account of a surgical complication. We believe that what insulin has accomplished for these cases from a physical and financial point of view can be accomplished in almost all comparable cases.

CASE 1.—A boy, aged 13, entered the hospital, Dec. 11, 1922. Diabetes was first recognized in November, 1921, and about eight weeks later was treated for a short time at the Deaconess Hospital in Dr. Joslin's[2] clinic. Thus, from January 20, until December 11, a period of about ten months, we have a control period of good hospital and home care without insulin. This period was depressing for the patient, as it was one of steady downward progress, and cost, in terms of the boy's life, nine months of school, 10 pounds (4.5 kg.) of weight, ten months of play, because the child was so listless that he exerted himself as little as possible, and an undetermined amount of strength. On the whole, life seemed scarcely worth living at the end of this period.

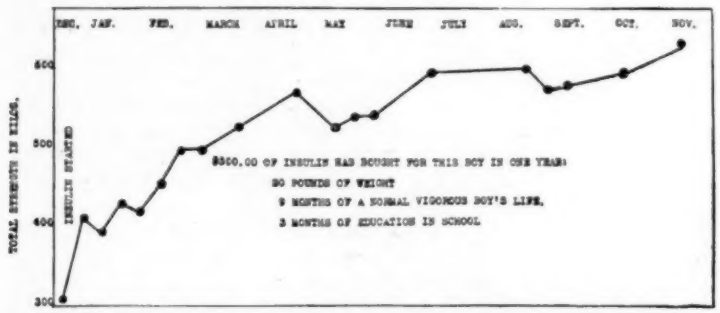
DEC. JAN. FEB. MARCH APRIL MAY JUNE JULY AUG. SEPT. OCT. NOV.
TOTAL STRENGTH IN KILOS.
INSULIN STARTED
$360.00 OF INSULIN HAS BOUGHT FOR THIS BOY IN ONE YEAR:
20 POUNDS OF WEIGHT
9 MONTHS OF A NORMAL VIGOROUS BOY'S LIFE.
3 MONTHS OF EDUCATION IN SCHOOL

Fig. 2.—Effect of insulin on strength in a case of severe juvenile diabetes.

The patient has taken insulin steadily since Dec. 12, 1922, or for a period of practically one year. Insulin during this time has cost about $500. For this investment the patient has gained three months of school, 20 pounds (9 kg.) of weight, nine months of normal life for a boy of his age, and redoubled physical strength (Figs. 1 and 2).

On the whole, the patient has made a gradual but progressive gain since he began to take insulin. His parents consider that no matter what the eventual outcome of the case may be, the expense of a year's insulin treatment has justified itself and they are thankful to renew the investment.

CASE 2.—A boy, aged 16, entered the hospital for insulin treatment, Feb. 15, 1923. He developed symptoms of diabetes two years previously and had been under observation in the wards of the hospital and the outdoor department diabetic class since the onset of his illness. In 1921, when he developed diabetes, he weighed 93 pounds (42 kg.). From March, 1921, until February, 1923, he gained nearly 30 pounds (13.6 kg.) and led a perfectly normal life with normal physical and mental development. However, in the fall of 1922, about three months before his second entry to the hospital, he began to have increasing difficulty in keeping the urine free from sugar, and appeared to be losing ground. On this account he was referred to the wards for insulin. In brief, this boy appeared to have diabetes, which had been managed satisfactorily and which had shown no signs of downward progress until two years after the onset of symptoms. Then, the tolerance seemed to diminish and the disease to become more acute.

The patient had taken about $70 worth of insulin from February until the middle of October, when we last saw him. During this time he gained 12 pounds (5.4 kg.) and sufficient strength with which to play on his high school baseball and football teams. Incidentally, he had a pair of diseased tonsils removed, did not miss any school work, and during the summer vacation felt so well that he voluntarily worked in a store each day. He and his family both feel that the insulin treatment has more than paid for itself. The details of this case are shown graphically in Figure 3.

There has been a steady gain in strength since insulin was started. It is interesting that this boy, with two years of diabetes behind him, should be stronger than the control nondiabetic boy of comparable age, height and weight, and that the nondiabetic boy should have been the one to get influenza during the winter. One might imagine that the systematic life of diet and exercise which the diabetic boy had followed since the onset of his illness had kept him in unusually good physical condition, and that with insulin and its extra food, he was able to develop physically at a faster rate than normal.

This case is of further interest because it serves to illustrate how much more comfortable for the patient is the treatment of diabetes with insulin. In order to show this graphically we have compared the treatment employed in this case in 1921 with that used in 1923 during the first eighteen days of hospitalization. The data are shown in Figure 4.

In 1921, the patient fasted for five days in order to get sugar free, never ate more than 1,000 calories of food a day, and was given only 6,000 calories of food during the eighteen days under discussion. In 1923, the patient did not fast at all, was desugarized in six days with insulin, at no time ate less than 1,000 calories of food a day, and was given 26,000 calories, or more than four times as much food as on his previous entry. In 1921, the patient was given high carbohydrate-low fat mixtures so that for every gram of utilized glucose he was allowed only about 10 calories of food. In 1923, the patient was given lower carbohydrate-higher fat mixtures so that for every gram of utilized glucose he was allowed about 26 calories of food. In 1921, the total glucose from all sources ingested in eighteen days was 705 gm., of which 75 gm. was lost in the urine; the object of treatment was to desugarize the urine as rapidly as possible by fasting and to build up a low caloric diet which was to keep well within the limits of tolerance. In 1923, the total glucose from all sources ingested during the same time interval was 1,380 gm., of which 300 gm. was lost in the urine; the object of treatment was to desugarize the urine without fasting and to build up a diet by insulin with which the patient could develop normally and lead a normal life regardless of what happened to be the tolerance without the new drug. In 1921, the patient complained of feeling weak and hungry as time went on. In 1923, he grew stronger as the urine became sugar and acid free, and he always had enough food to eat with which to keep him reasonably comfortable and happy.

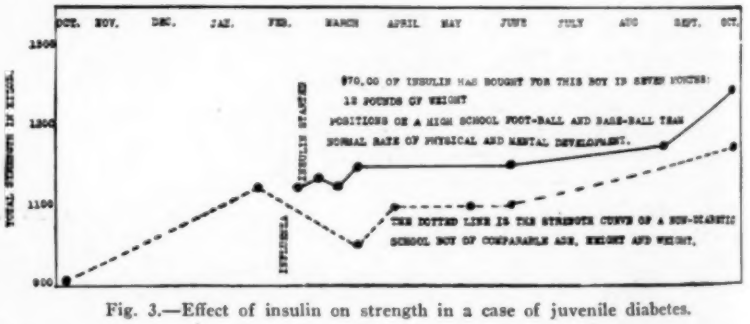
OCT. NOV. DEC. JAN. FEB. MARCH APRIL MAY JUNE JULY AUG SEPT. OCT.
TOTAL STRENGTH IN KILOS.
INSULIN STARTED
$70.00 OF INSULIN HAS BOUGHT FOR THIS BOY IN SEVEN MONTHS:
12 POUNDS OF WEIGHT
POSITIONS ON A HIGH SCHOOL FOOT-BALL AND BASE-BALL TEAM
NORMAL RATE OF PHYSICAL AND MENTAL DEVELOPMENT.
INSULIN STOPPED
THE DOTTED LINE IS THE STRENGTH CURVE OF A NON-DIABETIC SCHOOL BOY OF COMPARABLE AGE, HEIGHT AND WEIGHT.

Fig. 3.—Effect of insulin on strength in a case of juvenile diabetes.

CASE 3.—A man, aged 22, a machinist, entered the United States Navy in 1919, and developed diabetes while on active service in the fall of 1920. As soon as the diagnosis was established, he was given dietetic treatment, as a result of which he gradually lost about 10 pounds (4.5 kg.) and failed to gain enough strength with which to resume his trade. He entered the Peter Bent Brigham Hospital, Sept. 18, 1922. He was sent out on a reasonable diet without insulin, as a result of which for three months he improved considerably.

2. Dr. Joslin sent us a copy of his records in regard to this case.

Although never feeling perfectly well, he supported himself by working as a waiter in a club. He confessed that this work was unstimulating for a trained mechanic. Moreover, he found considerable difficulty in obtaining proper food, as he was forced to eat irregularly and often could not get the type of diet that his case called for. Finally, at the end of January, 1923 (about three months after discharge), he developed bronchitis, which hung on for a month and lowered his tolerance. He returned to the hospital, March 8.

Since his second entry to the Peter Bent Brigham Hospital, he has been taking insulin regularly. He has returned to his original trade, has been able to do occasional overtime work

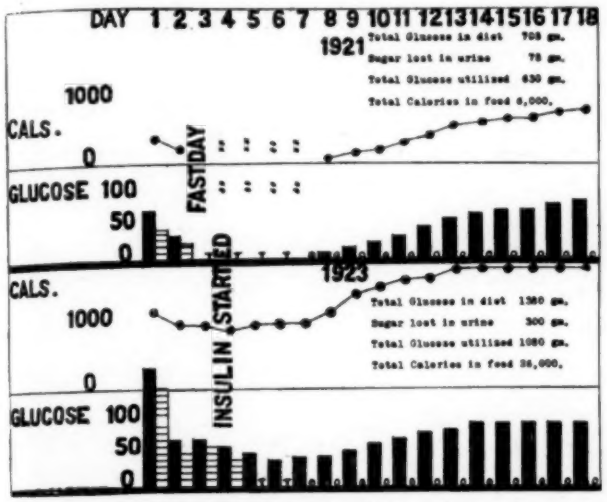


Fig. 4.—A comparison of the diet received by the same patient during eighteen days of hospitalization in 1921 without insulin, and in 1923 with insulin: The glucose of these diets was estimated from Woodyatt's formula; the cross hatched column represents the sugar excretion.

for fourteen or fifteen hours a day, and has gained about 20 pounds (9 kg.) gradually and a great deal of strength. He has found that it is more economical for him to buy fairly large amounts of insulin and thus eat large amounts of food, rather than to buy small amounts of insulin and restrict his diet on account of the strength he loses by a low diet. The essential features of this case are shown graphically in Figure 5.

The low level of strength which he was able to attain without insulin was insufficient to make him an active worker. By increasing his strength with $20 worth of insulin a month he has been able to increase his earning capacity and thus make $20 a month of extra money. Moreover, he has the mental satisfaction of working at the trade for which he was trained and of feeling perfectly well. On the whole, insulin has proved, for him, a first class financial investment.

CASE 4.—A colored man, aged 48, a waiter, entered the hospital, Aug. 24, 1922. The onset of his diabetes was indeterminate, as there were never any of the cardinal symptoms of the disease. However, the patient gradually lost about 30 pounds (13.6 kg.) during the course of two years and sufficient strength to make him consult a physician. He was discharged from the hospital after a month's treatment, sugar free without insulin on a reasonable diet. He remained outside the hospital for nine months. During this period he felt well, gained 10 pounds (4.5 kg.), kept free from sugar, gained strength, and had no complaint except that he became so tired after an eight hour day that it was not worth while to attempt extra work or to make extra money. He felt that he was not making the most of his life. Accordingly, he determined to see whether insulin would help him. He returned to the hospital, June 19, for a week, and was taught how to use the drug, which he has taken each day since. As a result, he can now eat more food than was otherwise possible; therefore he has gained a considerable amount of extra strength and is now able to work as hard as he likes without undue fatigue. By so doing he has increased his income almost 20 per cent., and he feels better than he has felt for many years. The details of progress in this case are recorded in Figure 6.

Without insulin he made a slow but satisfactory gain in strength up to a certain point. This strength, however, was insufficient for his economic needs. The extra amount of food that he is able to eat each month with $10 worth of insulin has brought him a higher level of strength, at which he is much more efficient. Therefore, he considers insulin a good business proposition and will continue to invest in it at all costs.

An interesting point in connection with this case is that the patient weighed 5 or 10 pounds more when he took less food without insulin than he now weighs when he eats a more liberal diet with it. The probable explanation for this finding is that when he was not taking insulin he had so little surplus energy that he spared himself in every way and therefore grew fat; now that he feels well he works harder, burns up more food and therefore has lost weight through his increased physical activities.

CASE 5.—A business man, aged 36, entered the hospital, Jan. 20, 1923. Diabetes was discovered three years previously, and since its onset was accompanied by a progressive loss of weight and strength. The patient forced himself to work at his sedentary occupation despite his physical weakness; what brought him to the hospital was the development of double cataract. When he reached the hospital, he was almost blind and could neither read nor write nor make out objects at close range.

It is a difficult matter to estimate the economic handicap of blindess to a business man. This patient stated that life for him without his vision was worthless because he had a wife and children to support. If he were dead there was sufficient insurance to keep his family from destitution; if he were alive and blind he believed that he could be nothing but an overwhelming liability to them. Therefore, he proposed to borrow money with which to gamble in insulin on the chance that by the new remedy he might have an operation to regain his eyesight and might also acquire sufficient strength with which to resume work and thus pay off the money lent for the treatment.

He was given insulin immediately, and from January 20 until November 22, when we last saw him, has invested $250 in the drug. This investment, with the help of good surgery, has already returned to him his eyesight. In addition, he has gained 15 pounds (7 kg.), and sufficient strength with which

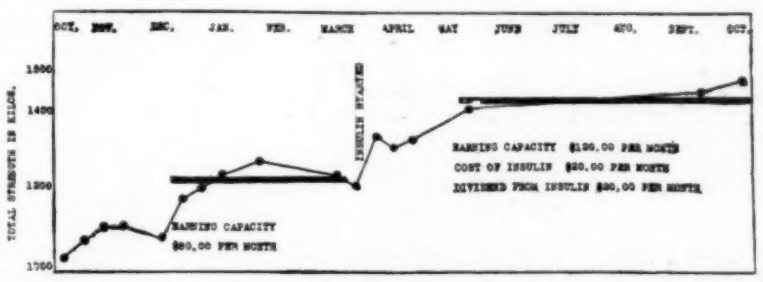


Fig. 5.—Effect of insulin on strength and earning capacity in a case of diabetes: The solid black line represents the average strength level of several determinations.

to go back to his business. As a result he has now begun to pay off his loan, he feels better and stronger each week and, in brief, he regards insulin as the best investment he ever made. The progress of this case is recorded graphically in Figure 7.

Insulin was immediately started in this case. After the urine was made sugar free and the patient had regained a little strength, he had a successful cataract operation performed. Subsequently he has continued to gain strength and has become able to resume his work as a business man. Since insulin was started there has been a steady upward progress in strength, in contrast to the previous three years' steady downward progress.

These examples are illustrative of the economic results in the treatment of diabetes with insulin which are being obtained in many cases throughout the country, and tend to show that, on the whole, the money spent by patients in buying insulin and in learning how to use it has been well invested and has purchased a satisfactory gain in strength and efficiency.

The chief objection to insulin is its expense. We believe that any patient who may require it should be told at the outset that he must have a course of at least ten days' hospitalization for study and education. In addition, he should be warned that the cost of the drug, if it proves necessary for his case, will be between 2 cents and 2 dollars a day for an indefinite length of time, depending on the amount needed. Since the expense of diabetes and its treatment with large doses of insulin may easily become a considerable financial drain on a patient or his family, we feel very strongly that insulin should not be imposed on people but should be given only in selected cases and never as a matter of routine or in larger dosage than is required.

Our present attitude toward insulin as a financial investment for the patient with diabetes can be summarized very briefly. Insulin is a remarkable drug as an aid to the dietetic treatment of diabetes, but is not necessary for most cases. The chief objection to it is its expense. Besides the cost of the drug itself, each patient using it must be adequately studied and instructed in hospitals with proper dietetic facilities. As a result, the financial investment for a year's treatment may be so great that patients who are given it unwisely will discard it and throw it into disrepute.

There are two classes of diabetic patients: those to whom insulin is a necessity and those to whom insulin is a luxury. Fortunately, diabetes is inherently a mild disease, tending to occur in people past the middle period of life and often lasting for years without producing any notable disability. Therefore the group of patients to whom insulin is a necessity is comparatively small and does not represent more than a third of any large series. As a general rule, insulin should be given in all cases of diabetes occurring in children and in people under 40; in all cases of coma or severe acidosis; in all cases complicated by an infectious process which has caused either a temporary or a permanent lowering of tolerance; in all cases of proved severity in which there is necessity for a surgical operation, and in all cases in which the tolerance without insulin, as determined by adequate dietetic control, is so low as to make efficient living impossible. No one should hesitate to urge such patients to take insulin at all costs, for the drug may be life-saving and almost always represents a sound financial investment for the patient, with a big dividend of strength and vitality.

Insulin, on the other hand, is a luxury for patients with mild diabetes who are seen most commonly. Almost all of these patients, if the disease is uncomplicated, have a high tolerance and do well for years on a reasonably restricted diet. Insulin offers them but little as a financial investment. If patients of this type wish to take small doses of insulin and can afford it, there may be no reason why they should not, and for a few cents' worth of insulin a day add a certain amount of extra food to their diets. They should not, however, be advised to take the new drug; rather should they be encouraged to get along without it as far as possible, or to use it sparingly.

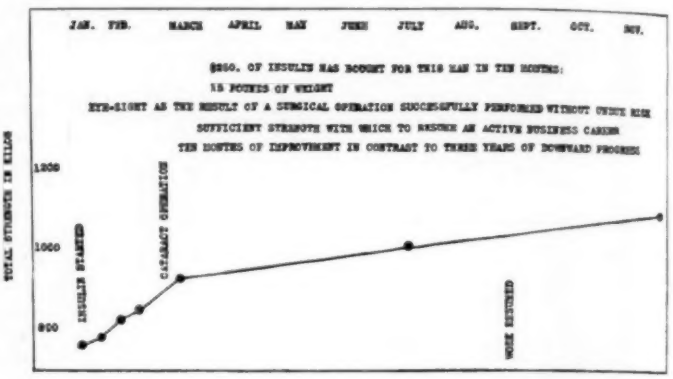
JAN. FEB. MARCH APRIL MAY JUNE JULY AUG. SEPT. OCT. NOV.
$250. OF INSULIN HAS BROUGHT FOR THIS MAN IN THE MONTHS:
15 POUNDS OF WEIGHT
EYE-SIGHT AS THE RESULT OF A SURGICAL OPERATION SUCCESSFULLY PERFORMED WITHOUT UNDUE RISK
SUFFICIENT STRENGTH WITH WHICH TO RESUME AN ACTIVE BUSINESS CAREER
TEN MONTHS OF IMPROVEMENT IN CONTRAST TO THREE YEARS OF DOWNWARD PROGRESS
TOTAL STRENGTH IN KILOS
1200
1000
800
INSULIN STARTED
CATARACT OPERATION
WORK RESUMED

Fig. 7.—Effect of insulin on strength in a case of severe diabetes.

The discovery of insulin marks a wonderful advance in the treatment of diabetes, but it must not be abused. The best economic use of insulin will be made by the conservative practitioner, who saves money for the majority of his diabetic patients by keeping them sugar-free and in good condition without the trouble and expense of the drug, but who holds it in reserve for his severer cases for use in as large amounts as are necessary to produce definite results.

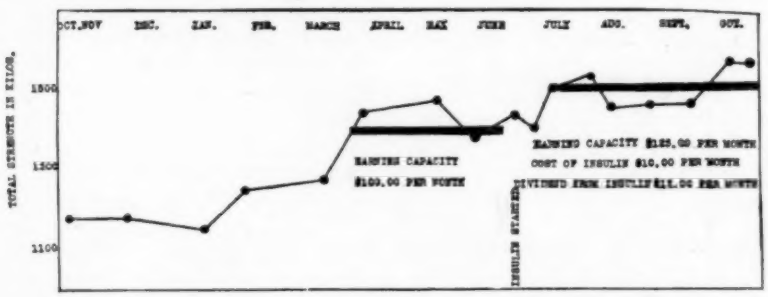
OCT. NOV. DEC. JAN. FEB. MARCH APRIL MAY JUNE JULY AUG. SEPT. OCT.
TOTAL STRENGTH IN KILOS.
1500
1300
1100
EARNING CAPACITY
$100.00 PER MONTH
EARNING CAPACITY $125.00 PER MONTH
COST OF INSULIN $10.00 PER MONTH
DIVIDEND FROM INSULIN $115.00 PER MONTH
INSULIN STARTED

Fig. 6.—Effect of insulin on strength and earning capacity in a case of diabetes. The solid black line represents the average strength level of several determinations.

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**The Cause of Influenza.**—It is impossible to define precisely what influenza is till we positively know its causation. There is no laboratory method by which influenza can be distinguished from ordinary colds because the same germs are found in the throat and nose secretions. Since 1893 the so-called influenza germ was accepted as the cause until the last great outbreak in 1918. But in the enormous experience in that pandemic doubt was thrown on the causative relation of the influenza bacillus, because this organism was not found in many localities in influenza patients while the symptoms were alike in persons of all nationalities all over the world. . . . Recently at the Rockefeller Institute investigators have isolated a minute bacillus-like organism (*Bacterium pneumosintes*) from the nose and throat secretions of influenza patients which passes through an earthenware filter. This germ, owing to its producing influenza in animals and to certain laboratory tests, is thought to be the true cause of influenza. An immune animal serum has also been secured which is being used to protect persons from influenza. Notwithstanding the high source from which this work emanates it is altogether too soon to unquestionably accept this new organism as the certain cause of influenza and even more impossible to evaluate the protective worth of the serum.—Winslow, K.: Prevention of Disease in the Individual.

# HYDROCHLORIC ACID THERAPY IN RICKETS *

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During the course of a study on inorganic salt metabolism in dogs and rats which has been in progress in the Department of Pediatrics of the University of California Medical School for the last two years, it has been observed that rickets develops in young puppies on a diet which appears to be adequate in respect to protein, fat, carbohydrate, inorganic salts and vitamins, but possesses a relatively high potential alkalinity. Parallel experiments with rats on the same diets have invariably resulted in normal bone development.

Schabad [1] and others have shown that in infants with active rickets the distribution of calcium and phosphorus between the urine and the feces is different from that which occurs in normal individuals—there being a much higher proportion of the total excretion lost in the feces of the former than in those of the latter. Experimentally, we have confirmed this, and have furthermore been able so to regulate the amount of alkaline salt mixture added to our basal diet as to divert the phosphorus almost entirely from the urine to the feces. If a large excess of salt mixture is given, only a trace of phosphorus appears in the urine, and healing may occur in a rachitic animal. On the other hand, a smaller amount of the salt appears to produce the optimal degree of alkalinity for the activation of the rachitic process, and severe rickets results.

If rickets can result from too high a degree of alkalinity in the intestines of an individual on a well constituted diet, as is frequently the case in artificially fed infants, it is possible that this condition may be the result of insufficient hydrochloric acid in the gastric secretion, or an excess of alkali in the intestinal juices. Since cow's milk is potentially alkaline in reaction and contains a large amount of buffer substances as compared with human milk, on the foregoing hypothesis, the fact that infants fed on cow's milk are more prone to rickets than those who are breast fed can be explained. Those infants having relatively little hydrochloric acid in the gastric secretion may develop normally when breast fed, but if the diet is changed to foods having a higher potential alkalinity, the amount of acid present may be insufficient for normal mineral metabolism. Individual differences in hydrochloric acid secretion may also explain why one of a pair of breast fed twins is rachitic and the other not. It is conceivable that the beneficial effects derived from cod liver oil, sunlight and improved hygiene may be due to the stimulation of general metabolic processes, and indirectly the readjustment of the acid-base balance in the body. For the latter theory we have some foundation in an athreptic infant, aged 3 months, in whom the gastric contents after a test meal of oatmeal gruel showed complete anacidity. Hydrochloric acid was added to the milk formula, and not only was there prompt and striking improvement in the general well-being of the infant, but the gastric tests made during

Fig. 2 (Case 3).—Right arm: *A*, before treatment; *B*, after treatment with hydrochloric acid for fourteen days; *C*, after treatment with hydrochloric acid for twenty-three days: decrease in cupping; irregularity of epiphyseal lines of ulna and radius.

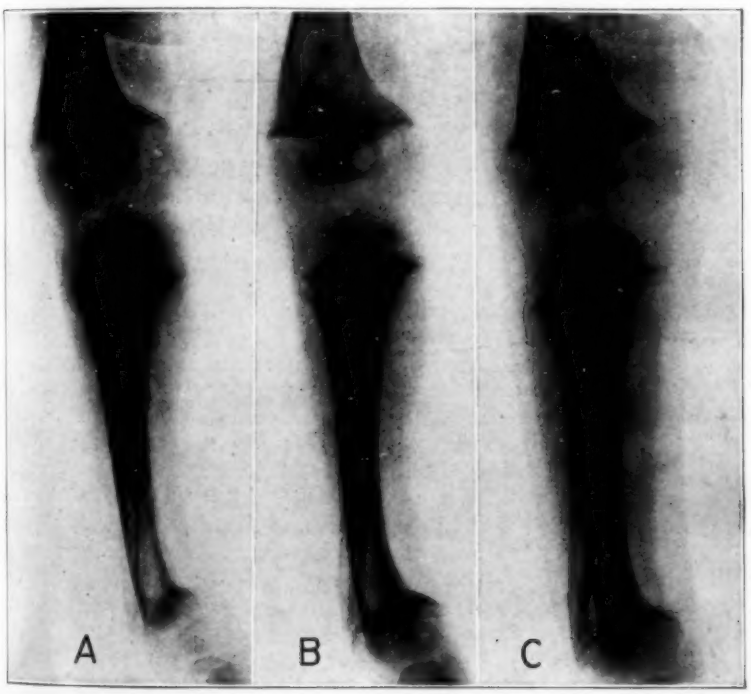


Fig. 1 (Case 3).—Right leg, showing knee and ankle: *A*, before treatment; *B*, after treatment with hydrochloric acid for fourteen days; *C*, after treatment with hydrochloric acid for twenty-three days.

* From the Department of Pediatrics, University of California Medical School.

* In connection with the Hooper Foundation for Medical Research, University of California Medical School, under a grant from the W. H. Crocker research fund in pediatrics.

1. Schabad: Ztschr. f. klin. Med. **68**: 94, 1909.

the acid therapy showed a curve well within normal limits. When the infant's condition warranted a discontinuation of the hydrochloric acid, gastric tests still showed the presence of considerable acid, although the curve was not so good as that during the acid therapy. Apparently, in this case, the increase in hydrochloric acid secretion was the result of general improvement which was initiated by the addition of acid to the diet. Furthermore, the fact that inanition greatly retards the rachitic process can also be explained in the foregoing hypothesis, since the products of catabolism of body tissue are acid in reaction, and may help to restore a normal acid-base balance. Hess,[2] in a recent paper, reported marked improvement in rachitic infants on a diet to which egg yolk was added. Since the potential acidity of 100 gm. of egg yolk is equivalent to 26.69 c.c. of normal solution,[3] it is possible that the additional acid may have been a factor in restoring a normal mineral balance.

Since we have been able to produce rickets in apparently normal puppies on a well constituted diet with the addition of an alkaline salt mixture, and to cure this condition with no changes in environment or diet other than the addition of hydrochloric acid, we decided to try out this therapy on rachitic infants. Unfortunately, only three cases of rickets have come under our observation in the University Hospital during the past year, but in all of these hydrochloric acid therapy was used with definite success. In view of our scarcity of clinical material, it seemed advisable to report our findings in order to stimulate further investigations along this line, and to prove or disprove the value of so simple a therapeutic agent.

We do not consider our investigations, clinical or experimental, in any sense complete, but hope to extend them and to publish our findings later in detail.

### REPORT OF CASES

CASE 1.—L. M., a very large, fat boy, aged 11 months, was admitted to the hospital on a complaint of convulsions. His diet consisted of a proprietary brand of condensed milk exclusively. All of the cardinal signs of tetany and rickets were present, the latter diagnosis being confirmed by blood analyses and roentgenograms. Gastric tests were made two and three hours after feeding, the hydrogen ion concentration being 4.5 and 4.8, respectively. The condensed milk formula was continued, and 25 c.c. of normal hydrochloric acid added. The excess of base over acid in the milk was estimated at 30 c.c. of normal solution, which was reduced to 5 c.c. after the addition of the hydrochloric acid. The improvement in the general well-being of the infant was prompt and striking, all signs of tetany disappearing within two or three days. After twelve days of hydrochloric acid therapy, roentgenograms were again taken, and a marked increase in the calcification of the bones was evident.

CASE 2.—G. K., a boy, aged 3 years, well developed except for deformities which were the result of rickets, was admitted to the hospital for the purpose of having his legs straightened. He had been having a mixed diet for about two years, and cod liver oil for the last six months. His mother thought his condition was growing steadily worse. Roentgenograms confirmed the diagnosis of active rickets. Owing to the age of the child, his diet could not be restricted. The cod liver oil was continued, and 2 c.c. of normal hydrochloric acid in about 200 c.c. of water was given one hour after each meal. Roentgenograms taken two weeks later showed slight but definite improvement. Owing, however, to the many variables in this case, we cannot attribute the improvement entirely to the small amount of acid received.

CASE 3.—H. F., a well nourished infant, aged 15 months, was admitted to the hospital on a complaint of convulsions (due to a fall) followed by a severe cold. Head sweating was profuse. A diagnosis of bronchitis and rickets was made, the latter being confirmed by roentgenograms and blood tests. The mother spoke English very brokenly, and it was impossible to secure an accurate history; but it appeared that the child had been fed on cow's milk exclusively. For a period of ten days after admission to the hospital, two teaspoonfuls of spinach and four tablespoonfuls of cereal were added daily to the diet of 1,200 c.c. of whole milk. By this time the bronchitis had cleared up, although profuse head sweating continued. Gastric tests after a meal of oatmeal gruel showed the presence of free hydrochloric acid. A sample of contents taken one and one-half hours after the ingestion of 240 c.c. of milk had a hydrogen ion concentration of 5.2. The vegetable and cereal were discontinued, and 10 c.c. of normal hydrochloric acid added to 1,200 c.c. of whole milk and divided into five feedings as before. No other additions were made to the diet. The potential alkalinity of the daily intake of milk was estimated at 28 c.c. of normal solution, which was reduced to approximately 18 c.c. by the acid added. Improvement in the general well being of the infant with a marked reduction in head sweating and restlessness were noted within two or three days after the beginning of the acid therapy, while roentgenograms taken after fourteen days showed a remarkable decrease in the cupping and irregularity of the epiphyseal lines, especially at the wrists and lower femora, with an increase in calcium deposit. Plates taken nine days later showed definite evidence of continued improvement. While it is possible that the change in environment and diet fed before the beginning of the acid therapy may have initiated metabolic changes which would have resulted in a spontaneous cure, we do not believe that this is true, and are inclined to attribute the marked improvement in this case to the hydrochloric acid.

Observations on this case have not yet been completed, and will be published later in detail.

2. Hess, A. F.: The Therapeutic Value of Egg Yolk in Rickets, J. A. M. A. **81**: 15 (July 7) 1923
3. Sherman and Gettler: J. Biol. Chem. **11**: 323, 1912.

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## SCIATIC HERNIA

### REPORT OF A CASE OF HERNIA OF MECKEL'S DIVERTICULUM THROUGH THE GREATER SCIATIC FORAMEN *

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Of all forms of hernia, the sciatic type is one of the rarest, or, at least, it would appear so, if the number of recorded cases can be taken as an index to the frequency of their occurrence. A careful search of the literature on this subject reveals the fact that less than thirty cases have been reported up to the present time, and of these, only one has been contributed by an American surgeon. It is to Dr. John Edward Summers [1] of the University of Nebraska that credit is due as the first surgeon in this country to report a case of sciatic hernia. In a paper read before the Western Surgical Association, Dec. 9, 1921, Dr. Summers described a case of sciatic hernia complicated with myxomatous tumor of the scrotum. This case, as far as I have been able to find in the literature at my disposal, constitutes the only one recorded in this country.

In sciatic hernia the intestine, or whatever structure it might be, for it may contain any viscus or organ sufficiently movable to reach and pass out of the pelvic cavity, escapes through either the greater or the lesser

* Read before the Richmond Academy of Medicine, Jan. 8, 1924.
1. Summers, J. E.: Ann. Surg. **75**: 672 (June) 1922.

sciatic foramen. This part of the pelvic wall presents three weak spots, and anatomically it is possible for hernia to take place through any of these places. The greater sciatic foramen is filled in by the pyriformis muscle, which has a small, slitlike cellular interval, both at its upper and its lower borders. Hernia may occur

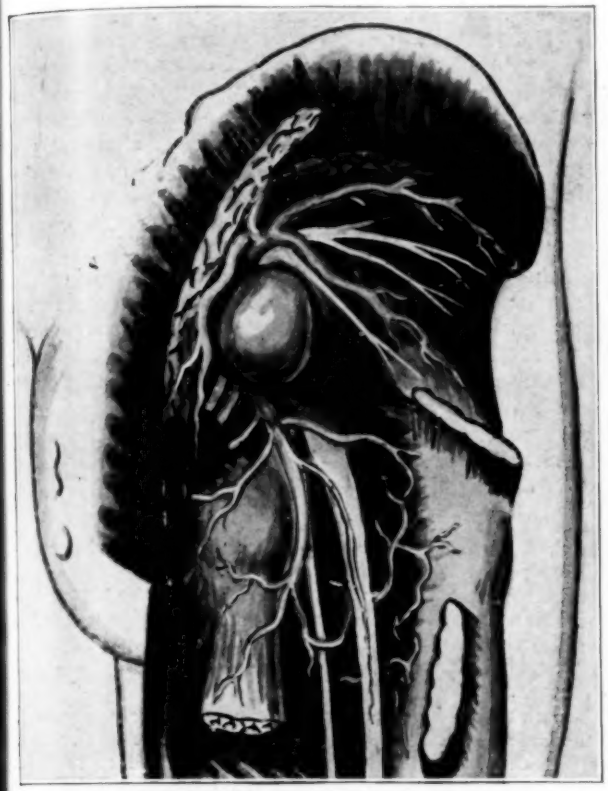

Fig. 1.—Sciatic hernia, from exterior of pelvis.

through either of these intervals, or it may pass through the lesser sciatic notch, which represents the third weak spot. After passing out of the pelvic cavity it presses beneath the gluteus maximus muscle, and, if small, may remain under cover of that muscle and escape detection, or it may reach such proportions as to form in the gluteal fold a well marked tumor. "In all cases through whichever opening the hernia passes it must always have the sacrotuberous ligament below it." This is an important point in differentiating sciatic hernia from a perineal hernia. In the latter, the sacrotuberous ligament, which is easily felt, lies above the hernial opening. Garrè,[2] in distinguishing between inguinal and femoral hernia, likens the sacrotuberous ligament in this respect to the inguinal ligament.

Probably chiefly on account of the rarity of sciatic hernia, comparatively little is known of its etiology. One case reported in 1873, by Crossle,[3] is of particular interest, since it gives a clear history of the cause. This case occurred in a woman who, while in the act of lifting a heavy iron plow into a cart, became suddenly conscious that something had given way in a situation deeply seated, where she later discovered a small tumor about the size of a pigeon's egg, situated on the margin of the gluteal fold on the same side. This tumor gradually increased in size until, when it was examined by Crossle, it had reached the size of a fetal head at term.

2. Garrè: Die Hernia ischiadica, Beitr. z. klin. Chir. **9.**
3. Crossle: Tr. Dublin Path. Soc., 1873.

Of the recorded cases, two thirds were in females. The greater frequency in that sex may be accounted for by the fact that the sciatic foramina are slightly larger, and the sacrotuberous ligaments longer and more lax, in females than in males. Doubtless, also, the ill effects of pressure and trauma attendant on labor predispose women to this form of hernia. "Sciatic hernia occurs more frequently on the right side than on the left, having been observed on that side ten times out of fourteen cases. M. Koppl has noted nine cases of strangulation out of the twenty-six cases published in the literature."

Although Sir Astley Cooper[4] is generally credited with having reported the first case of sciatic hernia in 1800, the literature shows that fifty years earlier, in 1750, a German physician of the name of Papen describes a case which came under his observation, in a letter addressed to the Swiss physiologist Haller.

The case which I report came under my observation in the dissecting hall of the Medical College of Virginia in 1922, and consequently nothing of the patient's personal history is known.

A negro convict, aged 19, came to his death by a gunshot wound of the chest, received while he was attempting to escape from the convict road force in one of the counties of the state. As no abnormal condition in the pelvis had been anticipated, the contained viscera had been much disturbed before the hernia was discovered. I noticed, however, an unusual quantity of small intestine in the pelvic cavity, which, at first, appeared to be bound down by adhesions; but a more

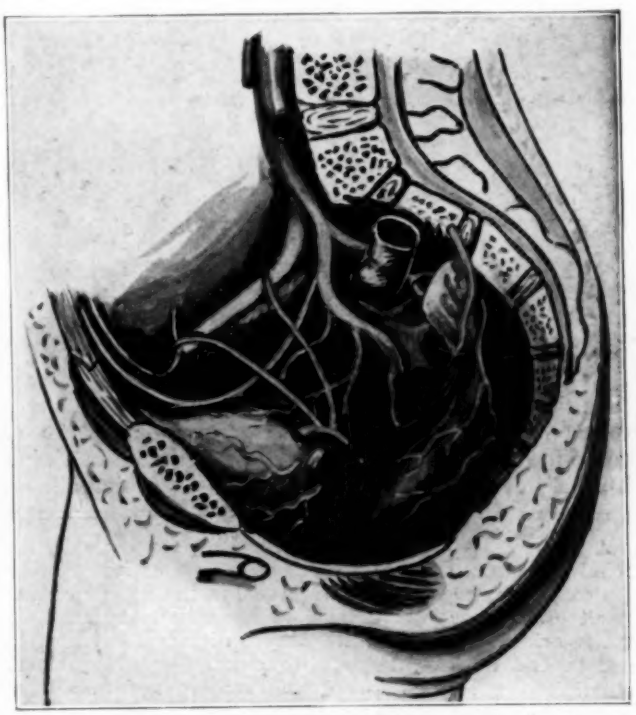

Fig. 2.—Sciatic hernia, from interior of pelvis.

careful examination showed the anchorage to be due to a herniated Meckel's diverticulum through the greater sciatic foramen. The diverticulum, which was about 10 cm. in length, was attached to the ileum about two feet from the ileocecal valve. At its point of origin

4. Cooper, Astley: Anatomical and Surgical Treatment of Abdominal Hernias.

the ileum was slightly narrowed and markedly kinked. The intestine passed out through an opening about 15 mm. in diameter above the pyriformis muscle and in front of the superior gluteal vessels and nerve, and ended in a globular tumor about the size of a hen's egg, which rested on the dorsal surface of the pyriformis entirely under cover of the gluteus maximus muscle. There was no visible surface enlargement, and in all probability the individual was never aware that such a condition existed. Figures 1 and 2 give an idea of the character of the hernia. Figure 3 is a copy of the illustration of the Crossle case, which was published in the reports of the Dublin Pathological Society in 1873, and has been frequently used in textbooks since that time as an illustration of sciatic hernia.

As previously stated, Dr. Summer's case, so far as I have been able to ascertain, is the only case up to this

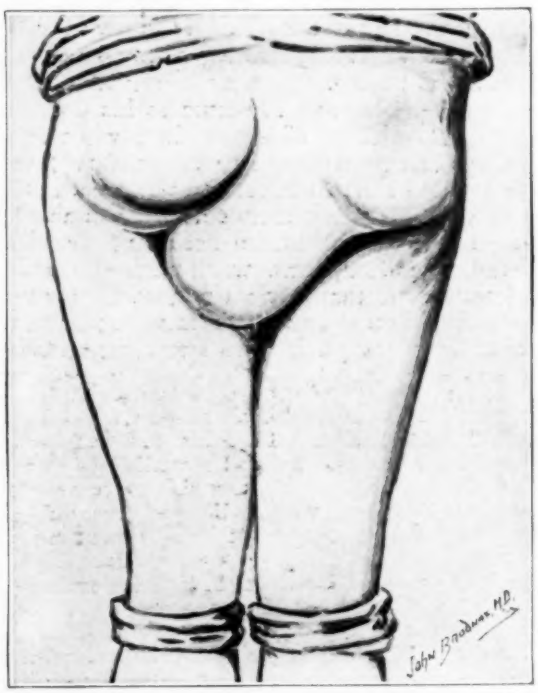

Fig. 3.—Sciatic hernia (Crossle's case).

time that has been reported in America, and the one I report here stands second, with the unique feature of being the first recorded case of sciatic hernia in which Meckel's diverticulum formed the herniated mass.

**A Piece of Scientific Poetry.**—Consider, for example, the relatively simple atom of magnesium. Two of its electrons are coupled closely to the nucleus and presumably describing small orbits about it. Outside of these lie eight more, in orbits oriented in space with a sort of cubical symmetry; and beyond these again are two others, describing rather elliptical orbits, penetrating during each voyage around the nucleus into the internal tangle composed of the rest of the orbits, and being thrown thereby into a processional sort of motion whereby the same path is not exactly followed in successive revolutions. A radiant magnesium atom has had one of its outer electrons removed by some accident to a more distant orbit from which it returns to its normal position by one or more discontinuous jumps, a gradual return being supposed not to be possible. This model is a beautiful product of the human imagination, a piece of scientific poetry of the highest art.—Saunders, F. A.: Some Aspects of Modern Spectroscopy, *Science* **59**:1516 (Jan. 18) 1924.

# THE ANATOMIC FINDINGS IN CASES SIMULATING PULMONARY TUBERCULOSIS *

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We present a group of clinical cases with the postmortem findings as recorded in the Department of Pathology at the University of California. The group comprises cases that were considered clinically as pulmonary tuberculosis, but which proved to be nontuberculous. In one of the seven cases, both the clinical and the gross pathologic diagnosis was tuberculosis, but the microscope disclosed another condition. For the clinical findings given, we are indebted to Dr. Esther Rosencrantz of the University of California Service at the San Francisco Tuberculosis Hospital; to Dr. H. I. Wiel of the University of California Medical Service at the San Francisco Hospital, and to Dr. H. W. Allen, Dr. William J. Kerr and Dr. Ernest H. Falconer of the Medical Service at the University of California Hospital.

CASE 1.—*History.*—A Danish dressmaker, aged 45, entered the medical service of the University of California Hospital, March 19, 1918, with a history of cough and some expectoration of greenish-yellow material for an indeterminate time. She had worked until eight weeks before, when she went to bed because of weakness, cough, some fever and dyspnea. She then began to raise blood-streaked sputum. Four days before admission, there was very marked dyspnea and orthopnea.

*Examination.*—The patient was pale, poorly nourished, orthopneic and extremely cyanotic. The heart was enlarged well to the left of the midclavicular line and to the sixth interspace. The right lung was flat below the second rib; tactile fremitus was absent here, and there were diminished breath sounds and rough, coarse, squeaky râles. There was no bronchial breathing. The left lung was hyperresonant, the breath sounds were exaggerated, and there were crepitant râles at the end of inspiration throughout. Over both upper lobes in back were whistling and piping râles. The temperature was from 38 to 38.5 C. (100.4 to 101.3 F.); respiration, 40, rising to 60, and finally 70; the pulse averaged 130.

Roentgen-ray examination showed the heart displaced to the left, a dense shadow below the second rib on the right, and a slight shadow at the left base; the conclusion was: pleurisy with effusion. From the right cavity, 140 c.c. of serosanguineous fluid was removed. The specific gravity was 1.014; the Rivalta test was positive; bacterial smear and culture were negative. The urine contained considerable mucus, a few white blood cells, and a rare red blood cell and hyaline cast. The blood hemoglobin was 85 per cent.; the red blood cells, 4,600,000; the white blood cells, 13,300 with 94 per cent. of neutrophils, 4 per cent. lymphocytes, and 2 per cent. large mononuclear cells.

On the third day after admission, the patient died. A pleural neoplasm was considered. The clinical diagnosis was: miliary tuberculosis of the lungs.

*Findings.*—The gross pathologic diagnosis was: extensively disseminated foci of gelatinous and caseous pneumonia, remarkably diffuse in both lungs, with a focus 3 by 5 cm. in the anterior inferior portion of the right upper lung; tuberculosis of the cervical and mediastinal lymph nodes, the liver, kidneys and bladder; bilateral hydrothorax; hydropericardium; moderate cardiac dilatation on the right; chronic interstitial splenitis and chronic pelvic adhesions.

* From the Departments of Pathology and Medicine, University of California Medical School.
* Read at the nineteenth annual meeting of the National Tuberculosis Association, Santa Barbara, Calif., June 22, 1923.

The microscopic findings were most surprising. Instead of tuberculosis, the process consisted of a remarkably diffuse primary carcinomatosis affecting both lungs, and metastatic in the lymph nodes, liver, kidneys and bladder. Nowhere was tuberculosis found. The normal lining of the alveoli of the lungs was diffusely replaced by cuboidal to low cylindric epithelial cells one or two layers thick, a fact that probably accounts largely for the rapid development of the dyspnea in this case.

Primary pulmonary malignancy has been given increasing attention since the work of Adler;[1] published in 1912. He found the incidence of primary carcinoma of the lung to be 0.069 per cent. in more than 400,000 necropsies reported from European sources, but he judged this figure much lower than the actual percentage because of the infrequency of microscopic studies in the older cases. In 1922, Barron[2] reported primary carcinoma in more than 0.9 per cent. of a series of 1,003 necropsies; and in our own series, soon to be reported, the incidence is even higher. While the latter figures are undoubtedly much above the average, they indicate the necessity of considering malignancy in every obscure case of chronic pulmonary disease.

Of the two principal types of primary malignancy, sarcoma is certainly less than one to four with reference to carcinoma. Differentiation of malignancy from tuberculosis is often extremely difficult, and, in a fair portion of the cases, the two are associated.

A review of the literature indicates that the history in the two may be similar; the symptoms of cough, expectoration, loss of weight, fever, hemoptysis, night sweats and chest pain are common, although instances of pulmonary malignancy without cough and also cases with little or no loss of weight have been reported. The dyspnea, or at least orthopnea, and the sense of oppression in the chest are perhaps more urgent in cases of malignancy. Of the physical signs, dulness with distant or absent breath sounds is said to be diagnostic of tumor when effusion can be ruled out. The auscultatory sign of bronchial obstruction that has been called "cornage" is thought by Adler to be almost pathognomonic of tumor. The sputum is not pathognomonic, although, in a few cases, recognizable tumor fragments have been found in it; but continued failure to find tubercle bacilli may lead to a diagnosis by exclusion. Hemorrhagic effusion is always suggestive, and it is at times possible, as in one of our cases, to find definite rosettes of carcinoma cells in the centrifugated exudate. Roentgen-ray examination, especially if repeated at intervals, may be of considerable assistance. But roentgen-ray examinations may likewise be misleading. A shortcut to diagnosis in two of our cases was the examination of sections from metastatic nodules. In the average case, however, there seems to be no royal road to diagnosis, and many will be seen too shortly before death for sufficient study.

In the case presented here the patient was seen only three days before death. Reviewing it in association with the postmortem findings, the only clues in the clinical record we can suggest toward differential diagnosis are the marked orthopnea, the sanguineous character of the pleural exudate, and the absence of tubercle bacilli in the sputum.

CASE 2.—*History.*—An American woman, aged 32, came to the University of California Medical Service, July 18, 1918, with complaint of fever, vomiting and shortness of breath. She had been troubled with her heart for nine years, and had occasionally noticed slight swelling of the feet after walking a good deal. She had felt weak for several years, and had had slight cough, with some expectoration when she caught cold. This was never bloody. Five days before admission to the hospital, she suddenly felt very hot. Later she had chills and shortness of breath. After taking some medicine, she vomited. The following day she developed a dry, nonproductive cough, which was worse at night. On the fourth and fifth days of her illness, she brought up some bright red blood while coughing. Her best weight had been 115 pounds (52 kg.), the usual weight 103 pounds (46.7 kg.); on admission, she weighed 97 pounds (44 kg.).

*Examination.*—The patient was poorly developed, emaciated and dyspneic, and the skin was moist and slightly jaundiced. There was some cyanosis of the lips and cheeks. The chest was emaciated, and the clavicular spaces were marked. At the right apex and just below the clavicle, the resonance was impaired and the breath sounds just below the clavicle were of tubular character. Low-pitched, sonorous râles were present on inspiration and expiration. Posteriorly there was impaired resonance over the right lung above the level of the seventh dorsal vertebra; there were squeaks throughout the whole right lung, and many fine, inspiratory râles at the base. The left lung showed definite impairment of resonance at the apex posteriorly; there was tubular breathing at the base, with many fine, inspiratory râles. The heart was enlarged chiefly to the left; there was absolute arrythmia; and a short, rough, presystolic murmur was heard over a very limited area at the apex. There is no record of a pelvic examination. The temperature was 97 F., the pulse 92 and the respiration 22.

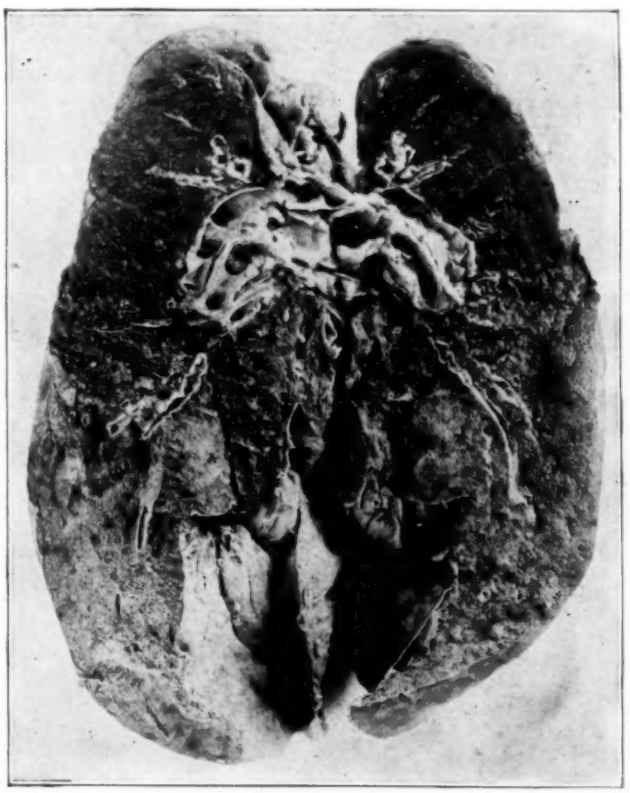

Fig. 1 (Case 3).—Right lung: marked pneumonoconiosis of upper lobe.

The urine contained a heavy trace of albumin, pus cells, occasional red blood cells and many granular casts. The white blood cells numbered 12,200; the hemoglobin and the number of red blood cells are not recorded. The sputum contained many organisms and red blood cells, but no tubercle bacilli or elastic fibers were found. There was no roentgen-ray examination.

1. Adler, Isaac: Primary Malignant Growths of the Lungs and Bronchi, New York, Longmans, Green & Co., 1912.
2. Barron, Moses: Carcinoma of the Lung, Arch. Surg. 4:626 (May) 1922.

Tincture of digitalis was given without effect on the cardiac arrythmia. On subsequent examination, many moist râles were found in both lungs. The patient remained dyspneic, and was troubled a great deal by cough. On the tenth day in the hospital, she died. The clinical diagnosis was: chronic myocarditis; auricular fibrillation; pulmonary tuberculosis.

*Findings.*—Necropsy disclosed a marked degree of mitral stenosis; enormous cardiac hypertrophy and dilatation; chronic endocarditis affecting the mitral, aortic and tricuspid valves; and insufficiency of these valves. There was thrombosis of the left auricular appendage and of the right branch of the pulmonary artery, involving especially the branch to the lower lobe. Corresponding to the distribution of this vessel was found a large infarcted area, the central portion of which was made up of multiple small abscesses. A small embolus was found in the left lung. The larger bronchi of both lungs contained a seropurulent exudate, and there was considerable edema of both lungs. There was unsuspected bilateral purulent salpingitis and associated thrombophlebitis of the pelvic veins.

The postmortem pulmonary findings in this case did not correspond at all to the physical signs. However, the history points very strongly to pulmonary infarction rather than to chronic pulmonary tuberculosis with a sudden exacerbation. The sudden onset of fever, chills and dyspnea, in a patient with auricular fibrillation and long-standing heart disease, was followed by persistent cough and, three days later, by repeated blood spitting. This syndrome, together, frequently, with initial chest pain, constitutes the classical picture of pulmonary embolism. Although the emboli, in this instance, undoubtedly arose in the thrombosed pelvic veins, it is, of course, not infrequent to find them arising in the heart itself in similar cases of chronic heart disease.

CASE 3.—*History.*—An English miner, aged 41, entered the San Francisco Tuberculosis Hospital, Sept. 7, 1921, in the University of California Service, because of dyspnea, cough and expectoration. He was referred by the Medical Service of the University of California Hospital with a diagnosis of pulmonary tuberculosis. The record from the San Francisco Hospital is used here.

The patient had worked in tin, gold, copper and zinc mines. He had measles, mumps and "shingles" in childhood, and influenza three years before entrance. His best weight, six years before, was 136 pounds (61.7 kg.), but he had lost 39 pounds (17.7 kg.). He began to be troubled with dyspnea six years before admission. A year before, it became very severe at times; and for six months it had prevented his working. He had become very weak; for over a month he had felt a constant tickling in his throat, associated with cough so severe as to induce vomiting. The sputum amounted to one-half cupful daily, and was occasionally blood-streaked. There were no hemorrhages, and no night sweats.

*Examination.*—On admission, the patient was emaciated and extremely dyspneic. The clavicular spaces were deep, and the expansion of the chest almost nil on the right, and very small on the left. Tactile fremitus was generally increased. There was dulness in front above the fourth interspace on both sides, and, posteriorly, above the fifth interspace on the right and the ninth interspace on the left. The breath sounds were amphoric at the apexes, and tactile and vocal fremitus were increased. Whispered echo of spoken voice sounds was present. Fine, crepitant râles were heard over both upper lobes anteriorly, and over the right upper and the whole left lung posteriorly. The liver edge was palpable. The fingers were clubbed.

The urine was normal. The blood hemoglobin was 75 per cent. (Sahli); red blood cells, 3,960,000; white blood cells, 8,700, with neutrophils, 55 per cent.; small lymphocytes, 34 per cent.; large lymphocytes, 8 per cent., and eosinophils, 3 per cent. No tubercle bacilli were found in the sputum. Fluoroscopic examination was interpreted as fibrous thickening of both tops, especially the right. The temperature had a usual maximum of 99.5 F. The pulse was about 100, and the respiration 28. On the eleventh day, the patient became very weak and expired. The clinical diagnosis was chronic pulmonary tuberculosis.

*Findings.*—Necropsy disclosed marked pneumonoconiosis, involving particularly the upper lobes of both lungs, the anthracotic pigment being accumulated into large, ball-like masses (Fig. 1). There was bronchopneumonia of the left lower lobe, but no tuberculosis could be found. There were chronic pleural adhesions, especially about the right upper lobe. Moderate dilatation of the right heart was present, with marked hypertrophy of the right ventricle and moderate hypertrophy of the right auricle.

CASE 4.—*History.*—An English electrician, aged 40, entered the University of California Hospital, Aug. 20, 1921, because of dyspnea and stomach trouble. His mother had died of tuberculosis. He had scarlet fever as an infant, and a chancre at 21. At 22, suppurating cervical glands on both sides were excised. At 24, sixteen years before entrance, he had a severe cough and some expectoration for four or five months. Two years later, he coughed up some blood, but he had since been apparently well until one year before entrance. He then began to notice shortness of breath on relatively slight exertion, which had persisted. Recently, he had had dyspnea after eating, and had had orthopnea at times. About ten months before entrance, he had an aching sensation in the right flank on getting up in the morning, associated with nausea and retching. At night he was excessively tired and dyspneic, and the gastric discomfort would return. The sensation was never relieved by eating. On admission, he had a tight feeling about the costal margins, which sometimes radiated around the body. He had lost weight rapidly in the preceding month, and was 15 pounds (7 kg.) below his normal weight.

*Examination.*—The patient was slightly undernourished, well developed, and had a bright malar flush. There was slight ptosis and pupil irregularity; the right pupil was larger than the left. The chest was poorly clothed and the expansion poor. The clavicular fossae were deep. The muscles over the apexes were markedly spastic; the resonance here was impaired and the breath sounds were roughened, with prolonged expiration. There were no râles. The heart outline was small; the second sound was accented over the whole chest, and the pulmonary second sound was louder than the aortic. There was a presystolic roll, with a slight systolic murmur over the apex at times. The knee jerks were hyperactive; there was a Romberg sign and a questionable Babinski's sign on the left.

The blood hemoglobin was 75 per cent.; red blood cells, 4,480,000; white blood cells, 14,600; neutrophils, 58 per cent.; small lymphocytes, 23 per cent.; large mononuclears, 10 per cent.; eosinophils, 9 per cent. The urine was normal. The blood Wassermann reaction was positive (+++), the spinal fluid Wassermann and cell count negative. Proteins were present, and the gold curve was 0000111000. The roentgenogram (Fig. 2) showed a diffuse, dense mottling throughout both lungs, with a small cavity at the left apex and adhesions at the right base. The conclusion, by Dr. Schulze, was advanced pulmonary tuberculosis. Roentgen-ray examination of the gastro-intestinal tract was negative. The patient was discharged after two weeks in the hospital.

He returned two weeks later. He had not been well since leaving the hospital, and two days before reentry he became markedly dyspneic, and began to vomit. Except for urgent dyspnea, the physical examination was as on the first admission. No râles were heard in the lungs. The temperature was 37 C. (98.6 F.) after the fourth day. The urine contained a trace of albumin, hyaline and granular casts and occasional white blood cells. The sputum was repeatedly negative for tubercle bacilli. Two days after admission, the heart was found enlarged to the left and to the sixth interspace; and a systolic murmur was heard at the fourth interspace just to the left and right of the sternum. On the fourth day there was marked venous pulsation, and cardiac dulness to the right of the sternum. Blood cultures were negative. Dyspnea and cyanosis increased, and the patient died on the ninth day after reentry, thirty-seven days after he was first seen.

The clinical diagnosis was: syphilis (not localized); chronic fibroid tuberculosis; tricuspid insufficiency; mitral stenosis (?); myocarditis, especially of the right side of the heart, with chronic passive congestion of the lungs, liver, kidneys.

*Findings.*—The necropsy disclosed marked hypertrophy and moderate dilatation of the right ventricle and, to a less degree, of the right auricle. There was moderate chronic passive congestion. The lungs showed a surprising picture of pneumonoconiosis. The cut surface appeared as a definite pattern-like arrangement, consisting of a tracery of fine strands of fibrous tissue associated with moderate black pigmentation, which divided the surface into small polyhedral areas, averaging 1 cm. in diameter. In the posterior surface of the right upper lobe, the fibrous tissue was almost of cartilaginous consistency. There was slight diffuse bronchiectasis, moderate pulmonary edema and emphysema. There was no evidence of tuberculosis.

In his comprehensive review of pneumonoconiosis in 1919, Landis[3] states the general opinion that differentiation between this condition and pulmonary tuberculosis is possible only by a repeated examination of sputum, extending often over a period of years. In a certain number of cases of pneumonoconiosis, the sputum is said to have a typical discoloration, but the diagnosis by physical or chemical examination has not been generally accepted by writers on the subject. In the second case presented here, the occupation gives no clue to the causation of the condition. The history, physical findings and roentgen-ray examination indicated a fibroid type of tuberculosis which was considered clinically as inactive. The failure to find tubercle bacilli in the sputum in more than a month of observation was considered of relative unimportance. In the first case, the occupation and the long continued dyspnea were suggestive of pneumonoconiosis. The patient was seen only eleven days before death. The striking feature of this case is the presence of physical signs of cavitation over areas of marked pneumonoconiosis.

Fig. 2 (Case 4).—*A*, appearance of small cavity at left apex; not found at necropsy.

CASE 5.—*History.*—A Japanese farm-laborer, aged 45, came to the University of California Hospital, July 18, 1922, with the complaint of "lumbago." He had ague at 15, smallpox at 34, and was said to have had "dysentery" with bloody stools "every March" for four years. He also had chancroid and gonorrhea; and he had influenza six years before admission. He was perfectly well until two months before, when he began to have pain in the lumbar region, to the left of the fifth vertebra. This had been constant, and had occasionally radiated down the left thigh over the great sciatic foramen. It was aggravated by straightening the back. At the same time, he had a "sore stomach" and bad cough. The stomach evidently soon ceased to trouble him, but there had been persistent anorexia and constipation. For two months, he had had no blood in the stool, but previously he had occasionally noted some. His cough had been persistent and progressively worse. For three weeks he had expectorated one-half cupful of purulent sputum daily; no hemoptyses had occurred. There had been no fever or chills, but he had experienced night sweats until one week before entrance. He had lost more than 20 pounds (9 kg.) in two months.

*Examination.*—The patient was markedly emaciated. He was suffering from lumbar pain, and was coughing hard, but expectorated little. He vomited 500 c.c. of bile-stained fluid after admission. The right jugular vein was more prominent than the left. There were a few small lymph nodes in the right anterior cervical triangle, and a large, irregular, hard, movable Virchow's gland. Two "shotty" lymph nodes were felt in the left axilla. The trachea was to the right of the midline. The chest was poorly clothed, the clavicular fossae were deep, and there was suprascapular flattening. There was thoracic scoliosis to the left. Chest expansion was limited, especially on the left; there was a "woody" feel over the left apex, and the left lung resonance was impaired throughout. Tactile and vocal fremitus were lessened; the breath sounds were harsh, and expiration equaled inspiration. There were no râles. The right lung was hyperresonant except at the apex. Tactile and vocal fremitus were increased. The breath sounds were vesicular but harsh; crackling râles were heard at the end of inspiration, and at the beginning of expiration below the right scapula. The heart was displaced to the right; the pulmonary second sound was accented. The abdomen was markedly spastic, but no masses were felt, and only a slight amount of tenderness, in the lower half, was found. Over the fifth lumbar vertebra there was tenderness to heavy percussion. There was a small hydrocele on the left, and the vas deferens and globus major of the epididymis were thickened and tender. The fingers were not clubbed.

The urine contained a slight trace of albumin, with an occasional white blood cell and two red blood cells to each high-power microscopic field. The blood hemoglobin was 70 per cent. (Tallqvist); the red blood cells, 5,336,000; white blood cells, 33,700, with neutrophils, 90 per cent.; lymphocytes, 4 per cent., and transitional and large mononuclear cells, 4 per cent. The Wassermann reaction was negative. No blood or tubercle bacilli were found in the stool, and no tubercle bacilli in the sputum. The roentgenogram (Fig. 3) of the chest was interpreted as showing extensive fibrous thickening and mottling throughout both lungs, with cavities at the left apex and behind the sternal end of the second right rib. There was pleural thickening at both bases. The conclusion, by Dr. Ruggles, was tuberculosis. Roentgen-ray examination disclosed the stomach to be small. It emptied rapidly. There was moderate peristalsis. The pylorus was normal. The cecum appeared ragged and fixed. The conclusion, by Dr. Ruggles, was cecal tuberculosis. Slight hypertrophic changes on the margins of the fifth lumbar vertebra appeared in the roentgenogram of the spine. The temperature ranged from

3. Landis, H. R. M.: Inhalation of Dust, J. Indust. Hyg. **1**: 117-139, 1919.

37 to 38.8 C. (98.6 to 101.8 F.); the respiration, from 16 to 28; the pulse, from 108 to 140. Dyspnea and lumbar pain became more marked. On the sixth day, crepitant and subcrepitant râles were heard over both lungs, posteriorly, and there was amphoric breathing at the right apex. On the tenth day of admission, the patient died. Generalized malignancy was considered. The clinical diagnosis was generalized tuberculosis of the lungs, intestines, kidneys, bladder and ureters, right epididymis and vas deferens, and of the lymphatic glands and peritoneum; possible terminal miliary tuberculosis.

*Findings.*—Necropsy disclosed a scirrhous carcinoma of the stomach, originating just proximal to the pyloric antrum, with diffuse extension into all the abdominal lymph nodes, and metastases to the lungs, liver, suprarenals, right epididymis and testis. There were fibrous pleural adhesions at the apex of the left lung. Both lungs contained diffusely scattered secondary tumor nodules arranged more or less in relation to the blood vessels. No cavitation was found.

This was a case in which everything, in a diagnostic sense, went wrong. The history, from an interpreter, was misleading as regards gastric symptoms. There was a history of blood in the stool, but none was found by chemical test. Possibly gastric analysis would have disclosed occult blood. However, this is the type of tumor in which, as Ewing[4] states, ulceration is absent or superficial, and hemorrhages are reduced to a minimum. The roentgen ray appeared to show a perfectly functioning stomach, with moderate peristalsis, a distorted cecum suggesting tuberculosis, and a diffuse pulmonary process with annular shadows interpreted as cavities.[5] In retrospect, it is possible to give due attention to the history of "sore stomach" and bloody stools, to the vomitus, the so-called Virchow's node and the relative absence of pulmonary râles, despite the seemingly diffuse pulmonary tuberculosis with cavitation. Failure to find tubercle bacilli in the sputum, stool or urine is suggestive.

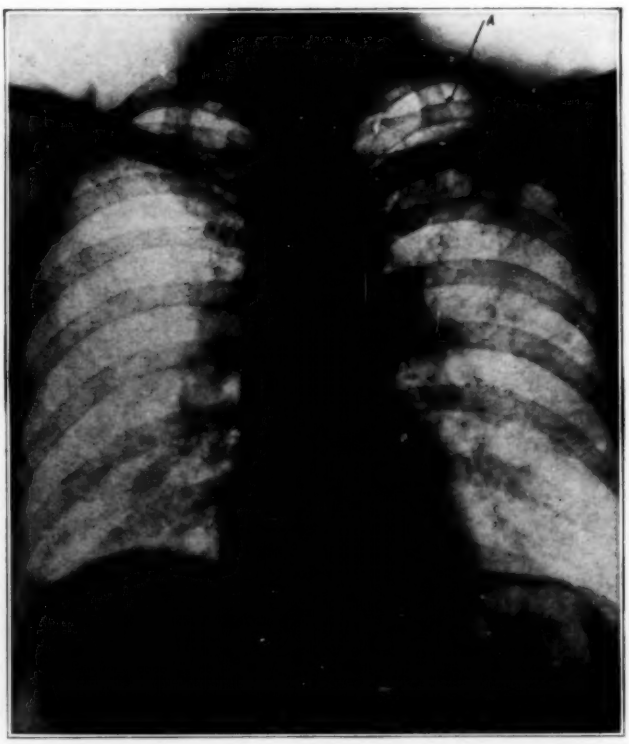

Fig. 3 (Case 5).—*A*, appearance of cavity at left apex; dense fibrous adhesions and large emphysematous blebs at apex found at necropsy.

CASE 6.—*History.*—B. H., a Jewish tailor, aged 69, entered the University of California Service of the Tuberculosis Hospital, Aug. 2, 1922, because of cough with expectoration, loss of weight, and weakness especially of the left hip. He had had the usual childhood diseases, and influenza a few months before. He usually weighed 125 pounds (56.7 kg.) but was reduced to 80 (36.3 kg.). His illness began ten months before with persistent severe cough and weakness, which kept him much of the time in bed. He began to lose weight rapidly. For eight months, he had been bedridden, and had had persistent cough and expectoration that was frequently bloody. There were no hemorrhages, no night sweats or fever.

*Examination.*—The patient was cachectic. There were patches of tinea versicolor on the chest. The pupils were slightly irregular. The left side of the chest appeared generally retracted, markedly so at the apex. The expansion of the left side was limited, and there was diminished tactile fremitus and dulness anteriorly and posteriorly. The breath sounds were of distant bronchial character; spoken and whispered voice sounds were increased. Râles were heard at the hilum. The right lung showed no abnormal signs. The heart was of normal size, but a harsh systolic murmur was heard at the apex; the pulmonary second sound was louder than the aortic. The temperature was 97 F. on admission, and remained normal or subnormal with the exception of one day. The pulse was 100; the respiration, 25.

The urine was normal; examination of the sputum was negative for tubercle bacilli. The blood hemoglobin was 75 per cent. (Sahli); red blood cells, 4,192,000; white blood cells, 5,200, with 60 per cent. neutrophils, 36 per cent. small lymphocytes and 4 per cent. large lymphocytes. Roentgen-ray examination was not done.

The patient died thirteen days after entrance to the hospital. The clinical diagnosis was: chronic pulmonary tuberculosis with chronic pleural adhesions; mitral insufficiency; compensatory emphysema.

*Findings.* — The anatomic diagnosis was: mesothelioma of the pleura, arising near the apex of the left lung with extension into the lung and the pericardium; metastases to the right lung, liver, spleen and medulla of the suprarenal; obliterating pleural adhesions over the left lung; bronchiectasis of the upper lobe of the left lung; obliteration of the upper branch of the left pulmonary artery by fibrous tissue; atelectasis of the lower lobe.

Primary malignant growths of the pleura are stated to be much rarer than those of the lung. Ninety-six cases were reviewed by Patterson[6] in 1909, but we have not seen any figures relating to the absolute incidence of the condition. The present case is one of the five recorded in about 1,600 necropsies in the department of pathology, one of which has been reported.[7] In the differentiation from tuberculosis, the history is of little value. The physical signs of pleural density in the absence of effusion is very suggestive, especially if diffuse and unilateral. However, in one of our cases there was bilateral involvement. In the presence of effusion, a hemorrhagic fluid, especially when recurrent, is important; and, occasionally, the diagnosis may be made from tumor fragments withdrawn by the needle. This, or thoracotomy, is the only certain means of diagnosis. Repeated roentgen-ray studies may be of considerable value in a rapidly extending growth. Finally, the persistent absence of tubercle bacilli from the sputum will help to exclude tuberculosis.

The case here reported was seen shortly before death. Repeated roentgenoscopy was not available.

4. Ewing, J. W.: Neoplastic Diseases, Philadelphia, W. B. Saunders Company, 1919, p. 638.

5. In Cases 4 and 5 we have had the advantage of a postmortem review of the roentgenograms of the lungs by Dr. Lloyd Bryan, who confirmed the interpretations originally given as the more probable.

6. Patterson, H. S.: A Case of Endothelioma of the Pleura with a Review of Ninety-Six Cases, J. M. Soc. New Jersey **5**: 373-382, 1909.

7. Du Bray, E. S., and Rosson, F. B.: Primary Mesothelioma of the Pleura, Arch. Int. Med. **26**: 715-737 (Dec.) 1920.

The signs of diffuse unilateral pleural density in the absence of an effusion, and the persistent failure to find tubercle bacilli in the sputum, were the principal indications that the process was nontuberculous.

CASE 7.—*History.*—An American housewife entered the medical wards of the San Francisco Hospital, Nov. 1, 1922, with complaint of dyspnea, orthopnea, cough and expectoration. She had had the usual childhood diseases, and influenza eight months before. Eleven years previously, she had a tumor of the left ankle, which was incised but did not heal. Later in the same year the diagnosis of sarcoma was made at the Mayo Clinic, and amputation of the left lower leg was performed. The patient's best weight was 189 pounds (85.7 kg.) six months before admission, but she then weighed 155 pounds (70.3 kg.).

Eight months before entrance, she spent eight days in bed with influenza; she got up while yet ill, and was said to have developed pneumonia, associated with pleurisy on the right side. Since this time there had been persistent right-sided chest pain, together with slight cough, and a little expectoration. Four months before admission, she coughed up one-half cupful of blood. She had had occasional nausea and vomiting not related to meals or to cough. We learn that she had been in the Tuberculosis Hospital two months before she entered the medical wards, for a period of thirteen days. The records indicate that the chest expansion was diminished on the right at that time, and that there was diminished resonance above the third rib. Anteriorly and posteriorly, there was harsh breathing over both lungs, with deep, sonorous râles. The sputum was negative for tubercle bacilli. Fluoroscopic examination by Dr. Bryan revealed contraction of the right thorax; fixation of the diaphragm; a dense shadow involving the right lobe, which suggested fibrous thickening. The blood Wassermann reaction was positive (+++). The temperature on admission at that time was 101.2 F., but it became normal after the fourth day. The discharge diagnosis was: syphilis (unspecified); chronic bronchitis; chronic pleural adhesions.

Since leaving the Tuberculosis Hospital, the patient had been confined to bed. Cough and expectoration had increased, the daily sputum being a cupful of greenish-yellow material. Night sweats had been frequent, and there was an increasing feeling of oppression in the chest, associated with breathlessness and orthopnea.

*Examination.*—The patient was extremely anemic, anxious-appearing, orthopneic and somewhat cyanotic. The right pupil was larger than the left. The superficial veins of the chest were dilated, especially on the left. The right shoulder drooped, and the expansion was limited on the right. Anteriorly, the whole right side was flat, and there was amphoric breathing at the apex; just below the clavicle, the breath sounds were amphoric, and there were musical râles. Elsewhere, anteriorly, there were diffuse, coarse, "vibratory" râles. Posteriorly, the right chest was flat below the level of the seventh dorsal vertebra, the right axilla was flat, and there was flatness on the left below the ninth vertebrae. There was occasional friction sound at the right apex and over the right scapula; and diffuse, coarse, "vibratory" râles were heard over both sides. The heart was slightly enlarged to the left; the pulmonary second sound was accented above the aortic. The temperature was 103 F.; the pulse, 20; the respiration, 24.

The urine contained albumin and many hyaline casts. The blood hemoglobin was 30 per cent. (Dare); red blood cells, 2,632,000; white blood cells, 16,600, with 92 per cent. neutrophils, 5 per cent. small lymphocytes and 3 per cent. large lymphocytes and transitional cells. The blood Wassermann reaction was positive (+++). Diagnostic puncture of the chest in the seventh right interspace yielded no fluid on two attempts. The sputum contained elastic fibers and numerous epithelial cells, but no tubercle bacilli were found. Because of the patient's extreme illness, another roentgen-ray examination was not made. She remained orthopneic, the respiration rate rising to 30 and finally to 50. The temperature continued high but remittent. On the eighth day, the percussion note was flat over the entire back, and vocal fremitus was exaggerated. Anteriorly, a high-pitched tympanitic note and tubular breath sounds were present over the right upper lung above the fourth interspace. Cyanosis was progressive, and the patient died on the tenth day. The presence of tumor was considered. The clinical diagnosis was: pulmonary tuberculosis; pneumonia.

*Findings.*—At necropsy, extensive bronchopneumonia was found in the lower lobes of both lungs, but the primary pathologic finding was metastatic fibrosarcoma of both lungs, which corresponded exactly in type to that of the ankle tumor for which amputation had been performed eleven years before. The principal involvement was found in the right upper lung. About the bronchus to the right upper lobe, and eroding into it, was a large, centrally placed mass of tumor, adjacent to which there were several bronchiectatic cavities and areas of fibrosis. Numerous metastatic nodules were found in the left lung and involving both pleurae. The pleural nodules may account for the persistent pain in this case.

The appearance of a metastatic sarcoma eleven years after attempted removal of the primary growth is quite unusual, the average interval being perhaps about two years. The clinical findings in this case which were suggestive of tumor are the orthopnea, the assymetrical dilatation of the superficial veins of the chest, the flatness over the right chest and the distant breath sounds in the absence of effusion, and finally the absence of tubercle bacilli from the sputum on two admissions to the hospital. The diagnosis was complicated by the presence of amphoric breathing over the right upper lobe, probably due to the associated bronchiectasis and by the onset of pneumonia shortly after the second admission to the hospital. A second roentgen-ray examination might have been of considerable value.

## SUMMARY

Seven cases diagnosed clinically as pulmonary tuberculosis were found at necropsy to be: (1) primary carcinoma of the lung; (2) pulmonary emboli from thrombosed pelvic veins; (3 and 4) pneumonoconiosis; (5) carcinoma in the lung secondary to carcinoma of the stomach; (6) pleural mesothelioma, and (7) sarcoma in the lung secondary to sarcoma of the leg, eleven years after amputation.

They are of interest as illustrating types of pulmonary disease which may closely simulate tuberculosis. In no case could tuberculosis be demonstrated by histopathologic examination.

Parnassus and Third Avenues.

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**A Relic of the Dark Ages.**—A factor of the utmost importance in producing one kind of mental attitude in the patient is the kind of hospital in which he is placed for treatment. The institution which hopes to bring about rehabilitation should be an institution of hope. It should be one in which its function is expressed by the question, "What can we do for the patient?" This includes the whole physical, mental and social welfare of the individual. Its function is also to be expressed in the added questions "What can we get the patient to do? What can the patient do for himself, what can he do for his family and what can he do for the community?" It is only an astigmatic, myopic, or perhaps an amblyopic institution that will dare to ask "What can the patient do for us?" In other words the improvement and the care of its patient as the goal of the institution make for a more hopeful group of patients. Asylums for incurables, with their emphasis on custodial care, may be needed for a few patients but they are more frequently relics of the dark ages. They deny the possibility of scientific advances and the patients are condemned to them to await dissolution.—Franz, S. I.: Nervous and Mental Reeducation, 1923.

# ETHYLENE AND OXYGEN AS AN ANESTHETIC FOR INFANTS*

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SEATTLE

Ethylene gas for anesthesia was advocated early in 1923 by Luckhardt of the University of Chicago. The Presbyterian Hospital in Chicago then began to use it. Good results were reported. Thus far ethylene has been used principally to anesthetize adults and children. No report of its use for infants has been found in the literature. The four cases presented here constitute a preliminary report on ethylene-oxygen as an anesthetic for infants. The only noteworthy difference in these charts is the respiratory curve. These notes are additional to the charts, which are otherwise self-explanatory.

CASE 1.—A boy, aged 4 weeks, weighing 4 pounds, 12½ ounces (2.2 kg.), was in a critical condition. He had lost a large percentage of his best weight, and was emaciated, weak and blue. A diagnosis of pyloric obstruction was made. The pediatric surgeon, who operated in all four of these cases, left the choice of the anesthetic to me. The weakness of the patient forbade the use of ether by the open drop method. Nitrous oxid and oxygen was rejected because of the presence of cyanosis and the necessity of relaxing the patient. Ethylene and oxygen was chosen because of its power of producing relaxation and because of the possibility of giving oxygen freely throughout the period of anesthesia. Amixture of 85 per cent. ethylene and 15 per cent. oxygen was used for induction. After the first few inhalations of the anesthetic, the color of the patient changed to pink, he relaxed completely, and his condition improved from then on. Fredet pyloroplasty was done. There was no loss of weight from the operation, and the speed of convalescence was remarkable.

CASE 2.—This infant was a twin brother of Patient 1, but his pyloric obstruction was not so complete. Operation was delayed until he was 5 weeks of age, when he weighed 4 pounds, 14½ ounces (2.25 kg.). A mixture of 85 per cent. ethylene and 15 per cent. oxygen was used for induction. Anesthesia was gradually deepened until the peritoneum was closed. Relaxation was sufficient, although not as satisfactory throughout the entire operation as it was in Case 1, but it could be produced at will by making the anesthesia deeper. The patient lost no weight following operation, and his convalescence was as good as his brother's.

CASE 3.—A girl, aged 16 days, weighing 6 pounds and 8 ounces (3 kg.), was a good surgical risk. A diagnosis of pylorospasm and partial pyloric obstruction was made. A mixture of 90 per cent. ethylene and 10 per cent. oxygen was used for induction. Fredet pyloroplasty was done. Relaxation was not as satisfactory with light anesthesia as in Case 1, but it could be produced at will by deepening the anesthesia. This patient made a satisfactory convalescence and lost no weight, but gained quickly and steadily.

CASE 4.—A boy, aged 25 days, weighing 6 pounds and 1 ounce (2.75 kg.), was jaundiced and his condition was only fair. A diagnosis of hypertrophic pyloric obstruction was made. A mixture of 95 per cent. ethylene and 5 per cent. oxygen was used for induction. Deep anesthesia was maintained throughout the operation, and Fredet pyloroplasty was done. The pyloric tumor was difficult to deliver because of the distention of the gallbladder. While the operator's finger was in the abdomen, raising the pylorus, respiration ceased; and although the anesthetic mixture was made richer in oxygen, respiratory inhibition persisted. Cyanosis, which may have been present, was disguised by jaundice. Oxygen alone was administered until the patient's color became pink and he resumed breathing. From then on, 60 per cent. ethylene and 40 per cent. oxygen was used. Whenever an attempt to deepen anesthesia was made, the pink color of the infant's skin changed to a yellow hue, and respiration was slightly inhibited. Relaxation was satisfactory and there was no loss of weight, but there was a gradual and steady gain in weight up to the fifth day. The jaundiced wound did not heal well. On the fifth day, the abdominal incision opened with evisceration, shock and death.

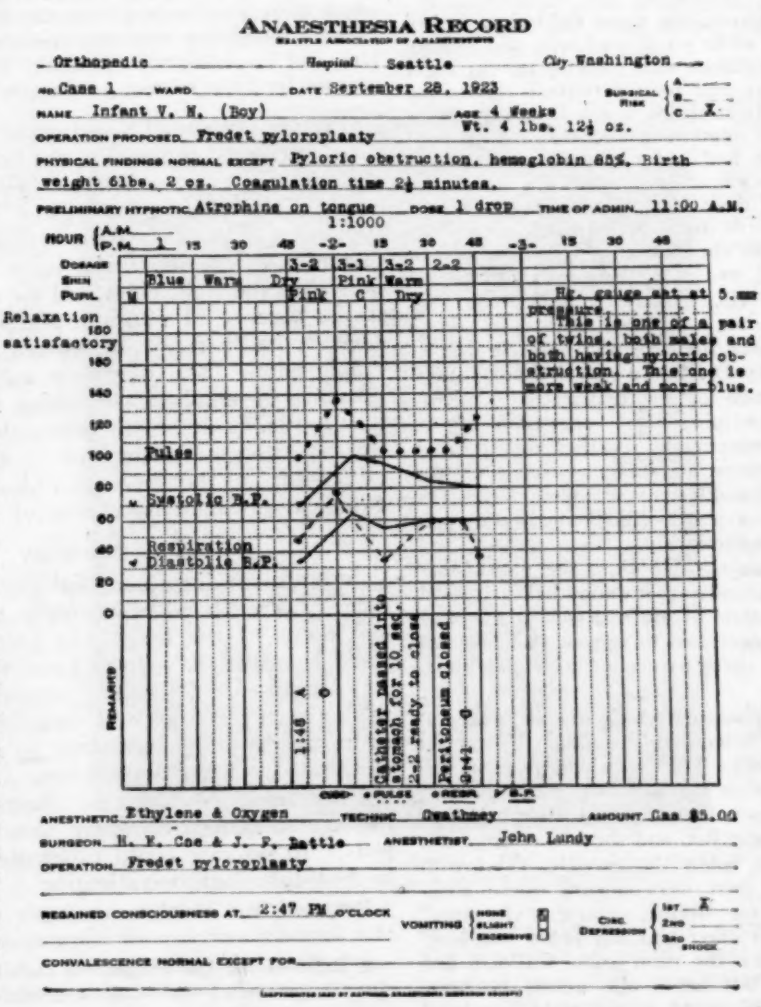
ANAESTHESIA RECORD
Orthopedic Hospital Seattle City Washington
No. Case 1 WARD DATE September 28, 1923
NAME Infant V. N. (Boy) AGE 4 Weeks Wt. 4 lbs. 12½ oz.
OPERATION PROPOSED Fredet pyloroplasty
PHYSICAL FINDINGS NORMAL EXCEPT Pyloric obstruction, hemoglobin 85%. Birth weight 6lbs. 2 oz. Coagulation time 2½ minutes.
PRELIMINARY HYPNOTIC Atrophine on tongue DOSE 1 drop TIME OF ADMIN. 11:00 A.M.
1:1000
Relaxation satisfactory
Pulse
Systolic B.P.
Respiration
Diastolic B.P.
Hg. gauge set at 5.mm pressure.
This is one of a pair of twins, both males and both having pyloric obstruction. This one is more weak and more blue.
Catheter passed into stomach for 10 sec.
2-2 ready to close
Peritoneum closed
ANESTHETIC Ethylene & Oxygen TECHNIC Gwathmey AMOUNT Gas $5.00
SURGEON H. K. Coe & J. P. Sattle ANESTHETIST John Lundy
OPERATION Fredet pyloroplasty
REGAINED CONSCIOUSNESS AT 2:47 PM O'CLOCK
CONVALESCENCE NORMAL EXCEPT FOR

Chart 1.—Anesthesia record in Case 1.

In each of these cases, the Gwathmey apparatus was used with a modified face piece. The small, nasal mask from the safety anesthesia apparatus was attached to the Gwathmey chimney piece. The rebreathing bag used was the extra large 14 inch size, which, when expanded, was at least twice as large as the patient. The mask was applied tightly over the nose and mouth, the patient breathing into and out of the bag. The expiratory valve was left half way open. The mercury gage was used as a safety valve, and was set at the 5 millimeter level, preventing excessive pressure in the bag. The blood pressure cuff (infants' size) was applied to the left leg and thigh. Blood pressure readings were taken by the oscillatory method. I have trained myself to take blood pressure readings in this

* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of two charts. The complete article appears in the author's reprints.

way, using in adults an arm cuff and checking doubtful readings with the auscultatory method. The dosage of the anesthetic mixture used has been recorded 3-2, 3-1, etc. This signifies three holes of ethylene and two holes of oxygen, three holes of ethylene and one hole of oxygen, etc.; 3-2 means a mixture of approximately 85 per cent. ethylene and 15 per cent. oxygen; 3-1 means a mixture of 90 per cent. ethylene and 10 per cent. oxygen. The time the anesthetic was begun is indicated by *A*, the time the operation was begun by *O*, and its completion by *C*.

Conclusions from these four cases are not justified, but as I believe that they are of timely interest, they are presented for consideration and comparison. A study of the charts of these cases will give the reader a concise idea of the effect of ethylene and oxygen as an anesthetic for infants. The respiratory rate curve of each patient is radically different from that of the other patients. It is well to bear in mind that each respiration is shallow; this is the reason embarrassing respiratory phenomena occur without warning when any kind of gas is used to produce deep anesthesia in these very young patients. I have administered nitrous oxid and oxygen to infants 6 weeks of age and older in the same way that ethylene and oxygen was used in these cases. In my experience, nitrous oxid has not been as satisfactory as ethylene for abdominal work in infants, especially if the patient is not a good risk. The following precautions must be continuously observed in order to make gas anesthesia safe for infants: 1. Watch the color. 2. Listen to the respiration. 3. Palpate the pulse. 4. Measure the blood pressures. Each reading should be noted on the graphic chart.

My experience in using ethylene in all types of risks, both old and young, leads to the conclusion that it is in the weak patient and the bad risk that the advantages of ethylene are most strikingly demonstrated.

318 Cobb Building.

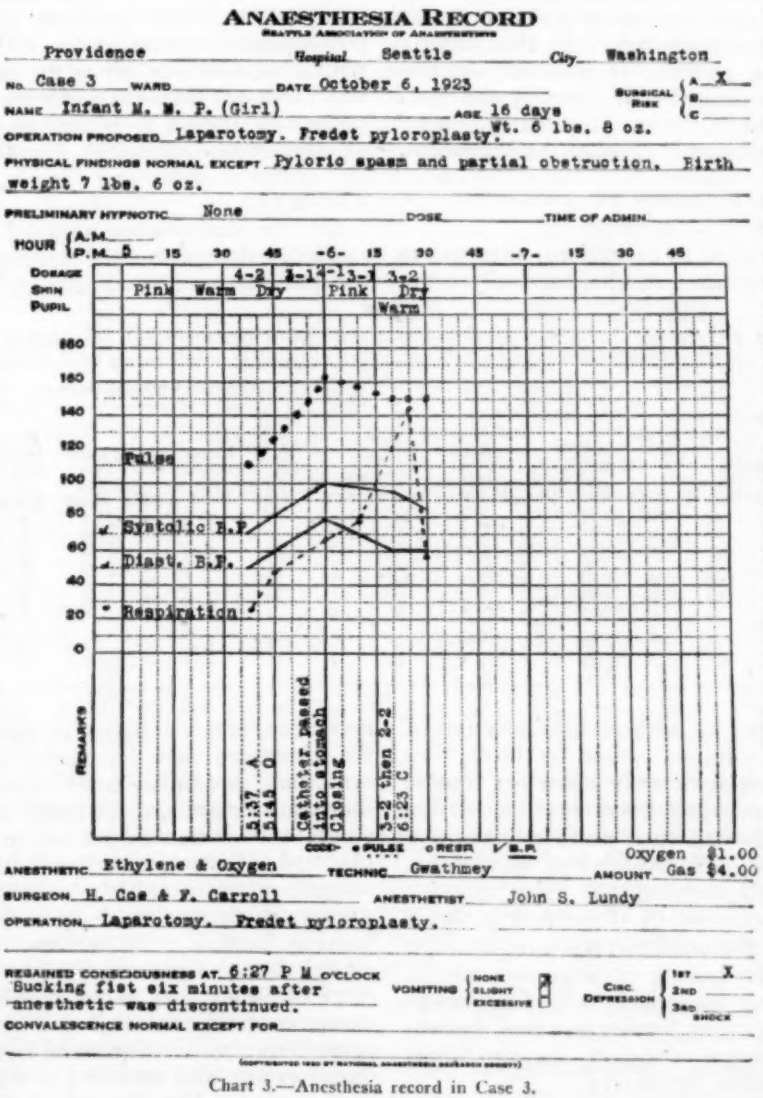
ANAESTHESIA RECORD
Providence Hospital Seattle City Washington
No. Case 3 WARD DATE October 6, 1923
NAME Infant M. M. P. (Girl) AGE 16 days Wt. 6 lbs. 8 oz.
OPERATION PROPOSED Laparotomy. Predet pyloroplasty.
PHYSICAL FINDINGS NORMAL EXCEPT Pyloric spasm and partial obstruction. Birth weight 7 lbs. 6 oz.
PRELIMINARY HYPNOTIC None DOSE TIME OF ADMIN.
Pink Warm Dry
Pink Dry
Warm
Pulse
Systolic B.P.
Diast. B.P.
Respiration
Catheter passed into stomach
Closing
ANESTHETIC Ethylene & Oxygen TECHNIC Gwathmey
Oxygen $1.00
Gas $4.00
SURGEON H. Coe & F. Carroll ANESTHETIST John S. Lundy
OPERATION Laparotomy. Predet pyloroplasty.
REGAINED CONSCIOUSNESS AT 6:27 P M O'CLOCK
Sucking fist six minutes after anesthetic was discontinued.
CONVALESCENCE NORMAL EXCEPT FOR

Chart 3.—Anesthesia record in Case 3.

**Hysteria.**—Hysteria is in its broadest sense not a specific disease, but a morbid biological reaction.—Dana: Textbook of Nervous Diseases, 1920.

## SPECIFICITY OF STREPTOCOCCI IN ETIOLOGY OF DISEASES OF NERVOUS SYSTEM *

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During an extended study of the infecting power of bacteria isolated in various diseases, I have been impressed by the extremely specific effects of green-producing streptococci, especially those isolated from infection atria, and from the brain and cord in diseases of the nervous system. Herpes zoster, associated with lesions in the intervertebral ganglions, was produced in rabbits and dogs by intravenous injection of a green-producing streptococcus from infection atria in patients at the time of acute attacks. This was not accomplished after recovery, nor after long cultivation of the organism. A similar streptococcus from four patients with intercostal neuralgia produced marked lesions of the posterior or sensory roots, usually unassociated with herpes, on intravenous injection in rabbits. A green-producing streptococcus obtained on two occasions from infected tonsils and teeth of a patient with severe multiple neuritis showed marked affinity for nerves, especially peripheral nerves, in three species of animals, a finding that has been corroborated since in other cases of neuritis and in sciatica, although in the latter the lesions were most marked in the sheaths of large nerve trunks. Intravenous injection of this type of organism from pyorrheal pockets and infected tonsils in a patient with infectious transverse myelitis produced paralysis with hemorrhagic lesions in the cord, in a series of animals. The lesions in each of these experiments were proved to be due to the streptococcus injected.

Because of these and similar results I decided, in 1916, to study the bacteriology of epidemic poliomyelitis and to test, with the newer methods, the infecting power of the organisms isolated. The results have been published from time to time, and they have recently

* From the Division of Experimental Bacteriology, the Mayo Foundation.

been corroborated in the main by de Prada[1] of Salamanca, Spain.

The underlying principles involved were applied in a study of the bacteriology of infection atria of patients with acute poliomyelitis, and of normal persons in more or less intimate contact with the disease during the epidemic in and around Rochester in 1921, and during the last four years in a study of the etiology of epidemic encephalitis, and encephalitis contacts, epidemic hiccup, spasmodic torticollis, respiratory arrhythmia, and normal controls.

Very similar streptococci have been isolated consistently from each of these diseases, and with them the various diseases have been reproduced in animals. The details of the results in epidemic hiccup and in one case of encephalitis have been published.[2] In this paper I shall present briefly the evidence of specificity of this organism manifested by the mortality rate, by the character of the lesions induced, by its symptom-producing power, and by its antigenic and agglutinating properties.

## SPECIFICITY AS MANIFESTED BY MORTALITY RATE AND SYMPTOMS

In the more recent studies, as heretofore, intravenous injections have yielded positive results, especially when localization was facilitated by intracerebral injection of sterile sodium chlorid solution, water or broth, but localization did not occur sufficiently often for routine work. I thought that perhaps intracerebral inoculation (the method that has yielded such uniformly positive results in virus studies in poliomyelitis) of small doses of washings of the nasopharynx, pus from infected tonsils or teeth, or of cultures of these, and of brain and cord in tall tubes of glucose-brain broth might serve to separate the organism having peculiar neurotropic properties from the other bacteria by affording favorable conditions for particular localization and growth for the former and adverse conditions for the latter. This idea has been found to be correct.

During preliminary studies, it was found that routine intracerebral or subdural injection far forward near the median line of two medium-sized or full-grown rabbits with 0.1 c.c. and 0.2 c.c., respectively, of the washing from the nasopharyngeal swabs or of pus from tonsils suspended in 2 c.c. of sodium chlorid solution, and about one-fifth that amount of primary cultures in glucose-brain broth of these or of brain and cord, usually sufficed for isolation of the specific strain. The results summarized in Tables 1, 2 and 3 were obtained in this way, care being taken to make the conditions of study as nearly alike as possible throughout the experiments. The greater neurotropic power of the streptococcus from patients with various diseases of the nervous system is shown by a mortality rate higher than that following injection of the control strains, ranging from 82 per cent. in the respiratory arrhythmia to 68 per cent. in the poliomyelitis series, in contrast to 29 and 23 per cent., respectively, in the control series. The mortality (40 per cent.) in the encephalitis contact series occupied a middle position, and was less than the poliomyelitis contact series (73 per cent.), a result within expectations, since the incidence of encephalitis was far lower than the incidence of poliomyelitis in the outbreaks studied, as is true generally. The specificity of the green-producing streptococcus, measured by its symptom-producing power, was often striking (Table 1).

Of the eighty-one cases of epidemic encephalitis studied, lethargy was the striking symptom in thirteen; the parkinsonian syndrome in fifteen; myoclonus in seventeen, and meningitis in five, while, in thirty-one, the symptoms were too varied for classification. The symptoms in animals often resembled, in one or more important respects, those noted in the particular patient or group of patients from whom the streptococcus was obtained. Lethargy occurred in 25 per cent. of 159 animals injected with the organism from the lethargic group, which was in sharp contrast to the incidence, varying from 6 to 14 per cent. in the other forms of encephalitis. Tremors, rigidity and marked slowness were often striking in the parkinsonian group. Myoclonic contractions were the striking feature in the animals injected with material from patients in the myoclonic group, and occurred in 45 per cent. of seventy-seven animals injected, which is in sharp contrast to the incidence (11 per cent.) of this symptom in the animals injected with the strains from the lethargic group. The percentage incidence of various symptoms expresses, in general, that commonly noted clinically in these diseases. Only a few need be mentioned specifically. Spasms of the diaphragm occurred in 40 per cent. of all animals injected with the streptococcus from epidemic hiccup, which is in sharp contrast to the incidence of 5 per cent. in the encephalitis, 4 per cent. in the respiratory arrhythmia, and 2 per cent. in the poliomyelitis series, and to the total absence of this symptom in the encephalitis contact, spasmodic torticollis, poliomyelitis contact and normal control series.

TABLE 1.—*Mortality and Percentage Incidence of Symptoms Following Intracerebral Inoculation of the Streptococcus*

| Source of Strain | Number of Strains | Number of Rabbits Injected | Number of Rabbits Died | Mortality, per Cent. | Spasms of Muscles: Diaphragm | Spasms of Muscles: Abdominal | Spasms of Muscles: Other | Abnormal Movements and Posture: Nystagmus | Rhythmic Movements of Head | Tic-Like Movements of Head | Ataxia | Turning of Head | Retraction of Head | Tremor | Hyperpnea | Paralysis | Lethargy |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Epidemic encephalitis | 81 | 519 | 384 | 74 | 5 | 8 | 22 | 8 | 2 | 1 | 30 | 7 | 8 | 42 | 24 | 33 | 13 |
| Encephalitis contacts | 11 | 30 | 12 | 40 | 0 | 0 | 13 | 10 | 0 | 3 | 47 | 33 | 0 | 17 | 23 | 13 | 7 |
| Epidemic hiccup | 13 | 116 | 82 | 71 | 40 | 15 | 51 | 19 | 16 | 9 | 34 | 16 | 13 | 58 | 50 | 26 | 19 |
| Spasmodic torticollis | 8 | 70 | 48 | 69 | 0 | 7 | 14 | 11 | 14 | 60 | 58 | 29 | 17 | 40 | 30 | 22 | 6 |
| Respiratory arrhythmias | 7 | 83 | 68 | 82 | 4 | 7 | 19 | 12 | 7 | 4 | 30 | 16 | 22 | 45 | 78 | 22 | 6 |
| Epidemic poliomyelitis | 49 | 92 | 63 | 68 | 2 | 3 | 2 | 1 | 2 | 1 | 23 | 0 | 2 | 30 | 14 | 35 | 2 |
| Poliomyelitis contacts | 56 | 61 | 45 | 74 | 0 | 3 | 5 | 2 | 2 | 2 | 23 | 5 | 8 | 31 | 18 | 43 | 0 |
| Poliomyelitis cases and contacts one year later | 48 | 48 | 14 | 29 | 0 | 0 | 4 | 10 | 0 | 2 | 17 | 8 | 2 | 4 | 6 | 8 | 0 |
| Normal controls | 77 | 106 | 24 | 23 | 0 | 0 | 2 | 7 | 1 | 3 | 16 | 8 | 2 | 4 | 9 | 8 | 0 |

1. De Prada: Personal communication to the author.

2. Rosenow, Edward C.: The Production of Spasms of the Diaphragm in Animals with a Streptococcus from Epidemic Hiccup, J. Infect. Dis. **32**: 41-71 (Jan.) 1923; Production of Spasms of the Diaphragm in Animals by Living Cultures, Filtrates, and the Dead Streptococcus from Epidemic Hiccup, ibid., pp. 72-94; Experimental Studies on the Etiology of Encephalitis, J. A. M. A. **79**: 443-448 (Aug. 5) 1922; Experimental Observations on the Etiology of Chorea, Am. J. Dis. Child. **26**: 223-241 (Sept.) 1923; Changes in Streptococcus from Encephalitis, Induced Experimentally, and Their Significance in the Pathogenesis of Epidemic Encephalitis and Influenza, J. Infect. Dis. **33**: 531-556 (Dec.) 1923.

Besides the evidence of specificity of the living organism in the experiments on epidemic hiccup (Table 1), it was found that the dead bacteria and filtrates of cultures likewise produced spasms of the diaphragm, but only when the living culture possessed this property. In some instances this occurred after many rapidly made subcultures. Tic-like movements of the head developed in 60 per cent. of the animals injected with the streptococcus from spasmodic torticollis, an incidence many times greater than in that of any of the other diseases. Hyperpnea, often associated with marked arhythmia and noisy respiration, was a pronounced symptom in 78 per cent. of the animals injected with the streptococcus from the patients in the respiratory arrhythmia group, in sharp contrast to this symptom in the other series. Weakness or paralysis of certain groups of muscles was highest in the poliomyelitis (35 per cent.), poliomyelitis contact (43 per cent.), and encephalitis (33 per cent.) groups, in sharp contrast to the incidence (8 per cent.) in the two control series.

with green-producing streptococci from miscellaneous diseases. The occurrence in the brain of uninjected rabbits of perivascular and other round-cell infiltrations, which often resemble closely those incited by the streptococcus, has been considered throughout the course of these experiments. Such infiltration was not found in any of thirty-nine rabbits selected for control material from time to time from the different lots injected. The microscopic findings in animals that died too soon for this type of lesion to develop serve as an additional check. Thus, only nine of 338 injected with material from patients with diseases of the nervous system or those in contact with acute encephalitis and poliomyelitis cases, and which died in five days or less; none of forty-nine injected five days or less before examination with streptococci from persons with miscellaneous diseases or from normal controls; none of eighteen injected with sterile filtrates, and only two of 142 injected with sterile filtrates, salt solution, or broth in connection with the experiments in the several diseases of the nervous system revealed the spontaneous

TABLE 2.—*Incidence and Character of Microscopic Lesions in the Central Nervous System Following Injection of the Streptococcus*

| | | Lesions of the Brains of Animals Injected | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Intracerebrally with | | | | | | | Intravenously with Cultures of the Streptococcus | |
| | | Material Containing the Streptococcus | | | | | Sterile Filtrate, Saline Solution, Broth or Spinal Fluid | | | |
| | | One to Five Days Before Necropsy | | | Six or More Days Before Necropsy | | | | | |
| Source of Strains | Number of Strains | Number of Animals | Leukocytic and Round-Cell Infiltration | Characteristic Round-Cell Infiltration | Number of Animals | Characteristic Round-Cell Infiltration | Number of Animals | Characteristic Round-Cell Infiltration | Number of Animals | Characteristic Round-Cell Infiltration |
| Epidemic encephalitis | 76 | 173 | 170 | 4 | 138 | 120 (87%) | 68 | 1 | 12 | 6 |
| Encephalitis contacts | 11 | 12 | 12 | 0 | 10 | 10 (100%) | | | | |
| Epidemic hiccup | 13 | 53 | 49 | 1 | 53 | 43 (81%) | 45 | 0 | 8 | 3 |
| Spasmodic torticollis | 7 | 32 | 32 | 0 | 24 | 19 (79%) | 17 | 0 | 6 | 2 |
| Respiratory arrhythmias | 7 | 42 | 42 | 3 | 18 | 17 (94%) | 10 | 1 | 11 | 6 |
| Acute poliomyelitis | 33 | 16 | 16 | 0 | 23 | 21 (91%) | 2 | 0 | 13 | 7 |
| Poliomyelitis contacts | 14 | 10 | 9 | 1 | 14 | 8 (57%) | | | | |
| Total | 161 | 338 | 330 | 9 | 280 | 238 (85%) | 142 | 2 | 50 | 24(48%) |
| Miscellaneous | 76 | 30 | 23 | 0 | 50 | 2 (4%) | 18 | 0 | 105 | 3 |
| Normal controls, 1922 and 1923 | 54 | 19 | 19 | 0 | 60 | 6 (10%) | | | | |
| Total | 130 | 49 | 42 | 0 | 110 | 8 (7%) | 18 | 0 | 105 | 3 (3%) |

### SPECIFICITY AS MANIFESTED BY THE LESIONS

The specific factor in the green-producing streptococcus isolated from the several diseases of the nervous system, as manifested by its greater power to incite characteristic lesions other than green-producing streptococci from similar sources in miscellaneous diseases and in normal controls, is indicated in Table 2. The incidence of characteristic round-cell infiltration in rabbits injected intracerebrally with the streptococcus six or more days before was 94 per cent. in encephalitis, 100 per cent. in encephalitis contacts, 81 per cent. in epidemic hiccup, 79 per cent. in spasmodic torticollis, 95 per cent. in respiratory arrhythmias, 91 per cent. in poliomyelitis, and 57 per cent. in the poliomyelitis contact series, an average of 85 per cent., or 238 of 280 rabbits examined, which is in sharp contrast to the incidence of 4 and 10 per cent., respectively, of the miscellaneous diseases and normal control series, an average of 7 per cent., or eight of 110 examined. This is in accord with the results following intravenous injection of streptococci from cases of encephalitis, epidemic hiccup, spasmodic torticollis, respiratory arrhythmia, and poliomyelitis, in which characteristic lesions were found in twenty-four (48 per cent.) of fifty rabbits, contrasting sharply with the low incidence of three (3 per cent.) in 105 animals similarly injected lesion. The total incidence of the spontaneous lesions in the rabbits used in my studies was therefore fourteen (about 2 per cent.) in 691, which is in sharp contrast to the incidence of 85 per cent., or 238 of 280 rabbits injected with the streptococcus from patients with diseases of the nervous system, and which lived long enough for characteristic round-cell infiltration to develop.

### SPECIFICITY AS MANIFESTED BY ANTIGENIC POWER AND AGGLUTINATING PROPERTIES

The antipoliomyelitis, antiencephalitis and antiinfluenza serums were prepared by repeated intravenous injections of horses with the respective freshly isolated green-producing streptococci preserved in dense glycerin-sodium chlorid solution suspension. The antipneumococcus serums were obtained from the New York State Department of Health. Equal parts (0.2 c.c. each) of the respective serum dilutions (Table 3) and from eighteen to twenty-four-hour glucose-brain-broth cultures or suspensions in water made from the dense glycerin-sodium chlorid solution suspension were mixed in small test tubes, incubated for one and one-half hours and then placed in the icechest over night, when readings were made and the degree of agglutination indicated by figures from 0 to 4.

The results in Table 3 are representative of a large number of experiments. The close relation between the poliomyelitis and encephalitis strains is well shown; the degree of agglutination, while somewhat variable in certain strains, is usually about the same. The agglutinating power of these serums is specific. Similar streptococci from normal persons or from other diseases are usually not agglutinated more by these than by normal horse and antipneumococcus serums. The poliomyelitis and encephalitis strains appear to be more closely related to the green-producing streptococcus, isolated so commonly in influenzal infections, than to type pneumococci, six of the strains being agglutinated slightly more by these serums than by normal and antipneumococcus serums. Moreover, these serums and immune serums prepared with a similar streptococcus 17 and 6 per cent., respectively. The encephalitis strains have been found to absorb the agglutinin from poliomyelitis serums and vice versa, which was not the case with green-producing streptococci that are not agglutinated by these serums. The serum of patients suffering from acute attacks of encephalitis and poliomyelitis has been found to develop specific agglutination for the two sets of strains, respectively. This was true of strains isolated both from infection atria and from the brain and cord in fatal cases.

## CONCLUSIONS

A low grade nasopharyngitis was a constant finding, and foci of infection in tonsils, teeth or sinuses were also found in most instances in each of the several diseases studied.

TABLE 3.—*Agglutinating Power of Various Immune Serums over Green-Producing Streptococci from Poliomyelitis, Encephalitis, and Other Sources*

| Strain | Source of Strain | Agglutination in Various Serum Dilutions: Antipoliomyelitis Horse 16 1:1 | 1:10 | 1:100 | 1:1000 | Antipoliomyelitis 312 1:1 | 1:10 | 1:100 | 1:1000 | Antiencephalitis, Horse 18 1:1 | 1:10 | 1:100 | 1:1000 | Antiinfluenza, Horse 15 1:1 | 1:10 | 1:100 | 1:1000 | Normal Horse 1:1 | 1:10 | 1:100 | 1:1000 | Antipneumococcus I 1:1 | 1:10 | 1:100 | 1:1000 | II 1:1 | 1:10 | 1:100 | 1:1000 | III 1:1 | 1:10 | 1:100 | 1:1000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4377².²* | Tonsil (acute poliomyelitis) | 4 | 3 | 2 | 0 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 4377².⁴ | Tonsil (acute poliomyelitis) | 4 | 3 | 1 | 0 | 4 | 4 | 2 | 1 | 3 | 3 | 2 | 0 | 3 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 0 |
| 4447².² | Tonsil (acute poliomyelitis) | 3 | 3 | 3 | 0 | 4 | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 2 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 2254 | Brain (acute poliomyelitis) (monkey) | 4 | 3 | 3 | 0 | 4 | 3 | 2 | 0 | 4 | 3 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4387².³ | Convalescing poliomyelitis | 3 | 2 | 1 | 0 | 3 | 2 | 2 | 0 | 3 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 4399².² | Throat (abortive poliomyelitis) | 4 | 3 | 3 | 2 | 3 | 2 | 2 | 1 | 4 | 3 | 3 | 2 | 3 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 3900.³ | Nasopharynx (lethargic encephalitis) | 3 | 2 | 0 | 0 | 4 | 3 | 0 | 0 | 4 | 3 | 3 | 1 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 3900⁶.³ | Nasopharynx (lethargic encephalitis) | 4 | 3 | 2 | 0 | 3 | 4 | 3 | 1 | 4 | 4 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3933⁵.² | Throat (lethargic encephalitis) | 3 | 3 | 2 | 1 | 3 | 2 | 2 | 1 | 3 | 3 | 2 | 1 | .. | .. | .. | .. | 2 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | .. | .. | .. | .. |
| 3947².³ | Nasal washings (lethargic encephalitis) | 3 | 2 | 1 | 0 | 3 | 1 | 1 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 4379².³ | Normal throat | 3 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 4396².¹ | Normal throat | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 4305².² | Infected tooth (arthritis) | 2 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 2 | 2 | 0 | 0 |
| 4307².² | Infected tooth (arthritis) | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 4313².² | Infected tooth (arthritis) | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |

* The exponent indicates the animal passage; the figure following the point, the subculture.

isolated from chorea [2] agglutinated specifically most of the poliomyelitis and encephalitis as well as chorea strains.

The agglutinating property of the strains isolated from infection atria of patients with the several diseases of the nervous system, from the miscellaneous group, and from normal controls, as obtained from inoculated animals, and of strains from the brain and cord in fatal cases of encephalitis and poliomyelitis was tested. The results are summarized in Table 4.

TABLE 4.—*Incidence of Specific Agglutination of the Streptococcus by the Encephalitis and Poliomyelitis Serums*

| Diseases | Number of Cases Studied | Specific Agglutination: No. of Cases | Per Cent. |
|---|---|---|---|
| Epidemic encephalitis | 65 | 51 | 78 |
| Epidemic hiccup | 7 | 5 | 71 |
| Spasmodic torticollis | 5 | 3 | 60 |
| Respiratory arrhythmias | 4 | 2 | 50 |
| Epidemic poliomyelitis | 46 | 35 | 76 |
| Poliomyelitis contacts | 39 | 29 | 74 |
| Miscellaneous | 59 | 10 | 17 |
| Normal controls | 32 | 2 | 6 |

Specific agglutination by the encephalitis and poliomyelitis hyperimmune serums occurred in a high percentage of the patients with the several diseases of the nervous system, and of those in contact with acute cases of encephalitis and poliomyelitis, ranging from 50 per cent. in the respiratory arrhythmia to 78 per cent. in the encephalitis series, whereas this occurred only rarely in the miscellaneous diseases and normal control series.

By direct intracerebral or subdural injection of material from infection atria, or primary culture thereof, in mediums affording a gradient of oxygen pressure, it has been possible to isolate similar streptococci from closely related diseases of the nervous system. With this streptococcus, when freshly isolated, after several animal passages, and after many rapid transfers, the symptoms and lesions have been reproduced in animals (rabbit, monkey, mouse and guinea-pig), and the organism demonstrated in the lesions. This was rarely possible with similar streptococci from other sources and with the specific strains after long, ordinary aerobic cultivation.

The strains from the various diseases of the nervous system were also much alike immunologically, being agglutinated specifically by the encephalitis and poliomyelitis hyperimmune serums and by the respective serums of patients. These findings, especially since they were consistently obtained over a long period and in a large number of cases, may be regarded as fulfilling the requirements of etiologic relationship.

Striking as these results are, it should be emphasized that the properties on which specificity depends are often extremely labile and are demonstrable only by strict attention to technical details. Many facts have come to light during these experiments which indicate that the specific properties of this streptococcus are acquired, a phase, perhaps, in the life cycle of the streptococcus group of organisms. Specificity as regards the power to produce characteristic symptoms and lesions and specific agglutinating properties are lost

readily on aerobic cultivation. With some strains, changes in localization occurred following animal passages, an observation in accord with the change in the types of encephalitis and poliomyelitis during certain epidemic waves, and with the variation in type in different epidemics. Thus, several of the epidemic hiccup strains acquired the power to produce epidemic (lethargic) encephalitis after animal passage and many rapidly made subcultures,[2] which is in accord with the fact that epidemics of hiccup usually occur at about the time of epidemics of encephalitis. A strain as isolated from epidemic encephalitis produced epidemic and other forms of encephalitis on intracerebral inoculation, and had little or no effect on intratracheal injection. After a series of rapid animal passages its virulence increased so that it produced acute encephalitis associated with meningitis on intracerebral injection, and marked hemorrhagic edema of the lungs, associated with leukopenia, on intratracheal application; experimental facts in accord with the observation that epidemics of encephalitis usually follow, or occur coincidental with, influenzal outbreaks.[2]

The common presence of this organism in the throats of normal persons during an epidemic of poliomyelitis, some of whom were not exposed to the disease, its absence in all but two of forty-eight proved carriers one year later when there was no poliomyelitis, its common presence in the throats of encephalitis contacts, and its absence in normal persons generally, indicate that perhaps epidemics of poliomyelitis, encephalitis and hiccup occur when streptococci normally present in the throat acquire peculiar neurotropic and other specific properties.

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## TRANSIENT AND RECURRENT AURICULAR FIBRILLATION

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PHILADELPHIA

The chief purpose of this communication is to direct attention to the importance of transient and recurrent auricular fibrillation of a paroxysmal character occurring in apparently healthy hearts, in moderately advanced myocarditis, and in other conditions in which the evidence of heart damage is less evident than in valvular disease. The material on which discussion has been based has been gathered from cases recorded in the literature on the subject, and from eight additional cases observed by me and here presented. Intermittent auricular fibrillation in association with frank valvular disease, having been already adequately described, is not included in the case reports. That transient form associated with auricular flutter is also excluded.

Intermittent auricular fibrillation first appeared in medical literature in 1907 in a report by Cushny and Edmunds.[1] They studied a single patient who had been subject to paroxysms of tachycardia with absolute irregularity over a period of twenty years, and later substantiated their conclusions by experiments on dogs. Krumbhaar's [2] contribution in 1916 is one of the earliest clinical reports, and is a careful study. Other reports have since appeared, so that the condition has now a definite place in clinical literature, and is occasionally observed by clinicians in cardiac clinics, although most of the reports deal with isolated instances, or with small groups of cases associated with either valvular disease, or advanced myocardial degeneration in elderly subjects. The occurrence of paroxysmal auricular fibrillation in young adults with healthy hearts, or in persons with only a moderate degree of myocardial damage is less well apprehended. A considerable number of cases of permanent auricular fibrillation have almost certainly been preceded by one or more transient periods of fibrillation. One is impressed with the frequency with which such patients, on careful questioning, describe previous attacks of palpitation. The more or less fleeting attacks of palpitation and breathlessness of which complaint is made by old persons are in some, if not in many, instances due to a transient fibrillation of the auricles.

### CLINICAL VARIATIONS

Temporary auricular fibrillation may vary in duration from a few seconds to several weeks. Obviously, the attacks of short duration are likely to escape detection unless frequently repeated, and are often confused with the disturbance occasioned by premature contractions. Attacks of fibrillation may be single, or repeated many times over a period of months, or even years. In the designation of the latter form, the use of the term paroxysmal is appropriate.

Isolated attacks are most likely to be due to extracardiac causes; multiple attacks occur, almost exclusively, in hearts in which the myocardium has been more or less damaged. Pulsus irregularis perpetuus is a designating term not accurately descriptive of auricular fibrillation in all its forms, since it may depart from the general rule that the abnormal mechanism, once established, is a permanent condition.

### ETIOLOGY

The etiologic factors which cooperate to produce a fibrillation of the auricular musculature are not very clearly definable. They may, however, be divided into predisposing and exciting; among the former may be mentioned impaired irritability of the cardiac musculature, and myocarditis in its early stages, the latter often associated with sclerotic changes in the arteries and kidneys. Among the exciting causes may be mentioned toxins, various alkaloids, and perverted actions of the nervous system.

With the establishment of the predisposing conditions of the auricular musculature, it is conceivable that various external factors acting on that musculature may excite a fibrillation of longer or shorter duration and of varying degrees of intensity. Toxins developed in the body, especially those associated with infections, e. g., lobar and lobular pneumonia, influenza, diphtheria and sepsis, may be regarded as causative agents.

Robinson's [3] recorded case of transient fibrillation due to hydrogen sulphid poisoning is a conspicuous instance of the action of a toxic agent on a healthy heart. Alcoholic intoxication has been followed by the condition. In other cases the alkaloids of digitalis, coffee and tobacco, alone or in combination with alcohol, have apparently been active causes. It is also conceivable that those instances of fibrillation following surgical operations may be due to the effects of the ether or other anesthetic, or possibly to the action of a toxic agent arising from the perverted metabolism of muscle tissue, the consequence of the surgical injury.

1. Cushny, A. E., and Edmunds, A. E.: Paroxysmal Irregularity of the Heart and Auricular Fibrillation, Am. J. M. Sc. **133**: 66, 1907.
2. Krumbhaar, E. B.: Transient Auricular Fibrillation: An Electrocardiographic Study, Arch. Int. Med. **18**: 263 (Aug.) 1916.
3. Robinson, G. C.: Transient Auricular Fibrillation in a Healthy Man Following Hydrogen Sulphid Poisoning, J. A. M. A. **66**: 1611 (May 20) 1916.

There is reason to believe that a general disturbance of the metabolism, such as is witnessed in thyrotoxicosis and in the acidosis stage of diabetes, may develop a fibrillation.

A study of some cases of auricular fibrillation leads to the supposition that the impaired irritability of the auricular muscle was associated with an impairment of the functional activities of the vagus nerve center, and especially of those cells and fibers which, according to Engelmann,[4] influence the irritability of the heart fibers in one direction or another; viz., the bathmotropic. Assuming this possibility, one can readily conceive that the vagus center may be acted on either by centrally or peripherally acting causes. Among the former may be mentioned psychic states of an emotional character, such as fright or anger. Among the latter may be mentioned some special form of irritation acting on various areas, e. g., the gastric mucosa, in the distribution of the afferent fibers of the vagus or other afferent nerve. Thus, in a heart predisposed to fibrillation from an impairment in its nutrition, it is apparent that a variety of external factors may directly or indirectly, through the cardiac nerve mechanism, excite a more or less transient fibrillation.

## CLINICAL MANIFESTATIONS

The characteristic irregularity, usually with pulse deficit, need not be described. In these transitory attacks the heart is often remarkably tolerant of the disorder, and circulatory effects are not marked. In some instances the symptoms are slight. The findings commonly associated with definite heart failure are not present. The symptoms may, in part, be obscured by associated constitutional toxic effects. More or less varied complaints are palpitation, fluttering, smothering, a feeling of oppression or tightness in the chest, nervous apprehension, weakness, sweating, nausea, faintness, even actual syncope, and disturbed sleep. There is little, if any, prostration; with recovery, the patient is apt promptly to resume his usual activities, apparently little the worse for the experience. The differential diagnosis chiefly concerns multiple premature contractions, often occurring as an associated feature, more particularly in those the subjects of myocardial damage, but possible also in the nervous reflex cases.

## PROGNOSIS

The ultimate outlook, as in most cardiac conditions, depends in large part on the inherent condition of the myocardium. The intensity exerted by a toxic factor, and its continuing or transitory influence, are important and sometimes primary considerations. Auricular fibrillation, whether transitory or permanent, is almost always significant pathologically of myocardial degeneration, but it may be wholly due to a transitory nervous or toxic influence acting on a healthy heart.

## CLINICAL REPORTS

The clinical material presented consists of eight cases of auricular fibrillation in which normal rhythm was reestablished after periods varying from a few hours to eight days. In each case the essential nature of the disorder was determined by instrumental means, the polygraph in Cases 1, 2, 7 and 8; the electrocardiograph in Cases 3, 4, 5 and 6. Cases of valvular disease have been intentionally excluded from the report. All of the patients were males, and all, except Case 3, were observed in private practice. The more important clinical features have been arranged in a table to permit of easy analysis; greater details are given in the case reports, which follow. It is desired to give emphasis to a few facts by drawing especial attention to them. Three of the cases occurred in those with apparently healthy hearts. A single attack is recorded in four patients, and has not been followed by further recurrence in observed periods, which vary as follows: Case 1, fifteen months; Cases 2 and 3, twenty-two months; Case 4, thirty months. Recurrent attacks occurred only in those with damaged hearts. One patient (Case 4) with a moderate grade of cardiosclerosis has so far suffered only a single paroxysm. Premature contractions have occurred in four cases.

*Summary of Cases*

| Case | Age | Etiology | Number and Duration | Symptoms | Associated Arrhythmia | Underlying and Associated Conditions |
|---|---|---|---|---|---|---|
| 1 | 27 | Alcohol | Single; 36 hrs. | Precordial oppression, smothering, apprehension | None | Healthy; normal heart signs and function |
| 2 | 30 | Gastric reflex, alcohol, tobacco | Single; few hrs. | Weakness, faintness, dizziness, nausea, vomiting, heart consciousness | Sinus | Healthy; normal heart signs and function |
| 3 | 42 | Influenza | Single; over 5 days | Dyspnea, fatigue, precordial tightness | None | Bronchopneumonia followed; no chronic affections; blood pressure 125/85 |
| 4 | 50 | Alcohol, fatigue | Single; 48 hrs. | Palpitation, fluttering, apprehension, insomnia | V. premature beats | Fibrofatty changes of moderate grades |
| 5 | 52 | Anxiety, nervous stress, overwork | Many in 6 yrs.; 2 to 7 days | Palpitation, weakness | None | Cardiovascular degeneration; blood pressure 110/70 |
| 6 | 53 | Diphtheria at onset | Over 5; 2 to 8 days | Syncope at onset; others not marked; some fatigue | A. premature beats | Cardiovascular renal disease; sudden death from uremia or apoplexy 11 months after initial attack |
| 7 | 65 | Underlying cardiosclerosis | Many in 18 months; 8 to 24 hrs. | Fluttering, weakness, sweating, breathlessness, dizziness, syncope in 3 attacks | V. premature beats: P. bigeminus | General sclerotic processes with progressive impairment of health; blood pressure 120/60 |
| 8 | 67 | Underlying sclerosis | Several; 2 to 48 hrs. | Breathlessness on exertion | V. premature beats | Cardiovascular renal sclerosis; blood pressure 150/160; sudden death from cardiac failure |

In no instance were the evidences of heart failure marked or comparable with those which occur in valvular disease, in which condition auricular fibrillation is most commonly found in both its intermittent and its permanent forms. The age of the patient would seem to have a direct bearing on the significance and gravity of the condition, the probability of myocardial degeneration increasing with an advance in years. Embolic phenomena did not occur in any case unless responsible for the sudden death, which twice occurred in the series.

## REPORT OF CASES

CASE 1.—*History.*—A man, aged 27, as the result of a drinking bout, became profoundly stuporous and was carried to bed. Several hours later he awoke with precordial oppression and a feeling of smothering and apprehension. Examined the following morning, the ordinary evidences of auricular fibrillation, with marked disorder, were present, and persisted for a total duration of thirty-six hours. The patient had always been healthy, and could not recall that he had otherwise been ill since his childhood. He had been without symptoms or

4. Engelmann: Arch. f. Physiol., 1900, p. 313, and 1902 Supplementary Vol. p. 1.

signs of any kind that might have suggested cardiac disease, previous to the disorder here recorded. Further examination and observation for several months indicated a normal heart of good functional capacity.

*Comment.*—Profound alcoholic intoxication would seem to be a causal factor of an isolated paroxysm of auricular fibrillation in a healthy young adult.

CASE 2.—*History.*—G. D. S., a man, aged 30, in the course of a convivial birthday celebration, ate rather fully, indulged freely, but not excessively, in various alcoholic beverages, and smoked somewhat more than his usual habit. Later, while seated in a theater, he became weak, faint and lightheaded, followed by nausea, vomiting and heart consciousness. Examined within an hour at his home, he was quite comfortable, and almost entirely recovered from his previous symptoms. The heart and pulse showed the characteristic derangements of auricular fibrillation, with a moderate grade of disorder. Recovery was complete the following morning. The electrocardiograph some time later showed only a sinus arrhythmia of slight degree. The patient's past medical history was free from the occurrence of any illness or circumstance that might bear a causal relation to chronic heart disease. A few months previously he had completed an active military training and service, which had revealed no cardiac disability. Subesquent careful examination, study and observation over two years have yielded no evidence of derangement of any kind, except occasional headaches and some sluggishness of the bowels.

*Comment.*—The occurrence of a single brief attack of auricular fibrillation in a healthy young man, the combined result of gastric reflex action, alcohol and tobacco is suggested.

CASE 3.—*History.*—E. S., a man, aged 42, had served as a private in the U. S. Army for three years, a street railway motorman for four years, and a police patrolman for fifteen years, in the order named. His discharge from the army was preceded by three months' treatment in a military hospital for dysentery, acquired in the Philippine Islands. Otherwise he had always considered himself strong and well, except for occasional soreness of the throat unaccompanied by joint or muscle pains, and not of sufficient severity to be regarded as an illness. There had been rather infrequent mild dyspeptic phenomena. He had led a regular life, and was free from pernicious personal habits.

December 6, 1921, while on street patrol duty, he felt weak and ill, had pains in the head and abdomen, nausea, and a bad taste in the mouth. The district physician found a temperature of 103 F. He was severely ill in bed for the succeeding five days, with insomnia, headache, and pains down the neck. After the acute symptoms had subsided, he still felt weak and tired, with a feeling of chest oppression and shortness of breath. He reported in person to the police surgeon one week after the onset of his illness, was found to have an irregular pulse, and was immediately sent to the Jefferson Hospital. The preliminary examination showed slight dyspnea, cyanosis, and an extended area of cardiac impulse, the apex being in the sixth interspace one-half inch outside the midclavicular line. The heart action was wholly irregular, from 110 to 120 a minute, an average of thirty of which beats failed to produce an impulse at the wrist. There were soft murmurs at the apex and base. The temperature was normal on admission, reached 103.3 on the following day, and ranged at declining levels for six days, and was normal thereafter. Scattered areas of pulmonary consolidation and fine râles at the bases were further evidences of a bronchopneumonia of moderately severe grade, following the influenzal attack. To the diagnosis were added acute myocarditis and auricular fibrillation, with the possibility of valvular sclerosis to be later determined. There was no evidence of renal disease in seven urine examinations. Normal cardiac rhythm was permanently resumed on the fifth day after admission, with the decline of the temperature to normal, following the administration of approximately 2 drams (7.5 c.c.) of tincture of digitalis in divided doses of 20 drops each. A thrombophlebitis involving the popliteal vein developed eight days later, and subsided in the course of two weeks. He was discharged, Jan. 5, 1922, after sixteen days of continuous observation.

January 14, he presented himself for examination, after a brisk walk of twelve blocks without fatigue or discomfort, and said that he had almost recovered his normal strength, and was entirely without symptoms. The cardiac impulse and the apex beat were neither visible nor palpable; there were no shocks, thrills or murmurs; the sounds were diminished in intensity and somewhat tic tac in character. The pulse showed slight sinus arrhythmia. The systolic blood pressure was 125; diastolic, 85. The range of the blood pressure during the first ten days of hospital care was from 120 to 110 systolic and from 80 to 70 diastolic.

Oct. 19, 1923, he was again examined. The functional capacity apparently was fully normal; there was no departure from normal signs, with the exception of diminished intensity of the first sound; the systolic blood pressure was 130; diastolic, 90; an electrocardiogram yielded no evidence of mechanical derangement or muscular degeneration.

*Summary.*—An epitome of the important features of this case presents an apparently healthy, active man of 42, without previous illness of cardiac importance, who suffered an attack of influenza, in the course of which auricular fibrillation developed, and persisted beyond the primary affection, and was associated with bronchopneumonia, with complete recovery. The possibility of an underlying chronic myocardial degeneration must be borne in mind, but the history, active life, apparent good health, recovery, and subsequent course, would weigh against such a conclusion. The cardiac derangement and circulatory impairment incident to the auricular fibrillation may have been factors in the production of the bronchopneumonia.

CASE 4.—*History.*—J. B. M., a lawyer, aged 50, who came under my medical observation in October, 1917, suffered from nervous indigestion, and was treated for nine months at the age of 19. He had typhoid fever, complicated by phlebitis, at 26 and diphtheria and gonorrheal arthritis in his twenty-eighth year. Appendectomy was performed at 37, at which time the gallbladder was palpated and reported normal. For many years he had rheumatic tonsillitis with mild joint affections. Tonsillectomy was performed at 45, with relief from joint pains.

He had been a steady and occasionally an excessive drinker and smoker, had worked hard, and lived somewhat irregularly. His father died suddenly at his work, without previous illness. A brother is said to have a weak heart.

Nov. 24, 1919, a careful examination revealed no heart signs; there was palpable thickening of the arteries; the systolic blood pressure was 120; diastolic, 80. A trace of albumin, and a few tube casts were found in the urine. The pulse was perfectly regular, 60 a minute. He described premature contractions occurring after going to bed.

March 28, 1921, the patient presented himself with the statement that he had played cards throughout an entire night, and consumed much tobacco and alcohol; on retiring he was disagreeably conscious of his heart's action; he had arisen, walked briskly for several miles, and had then taken a Turkish bath. The following night he had slept but little because of the disagreeable beating of his heart. He was seen the next morning, and presented the ordinary clinical and electrocardiographic features of auricular fibrillation. The heart rate was 90, with failure of a considerable number of beats at the wrist. He was sent to the hospital, and digitalis administered. Normal rhythm was regained in forty-eight hours. During the two and one-half years that have followed, there has been no recurrence of the auricular fibrillation, but premature contractions are intermittently present at night, and at times disturb him greatly. Even under a hygienic mode of life, there is a lessened capacity for both mental and physical effort. He is without cardiac signs, except distant sounds; the blood pressure ranges under normal limits, usually a reading of 110 with a pulse rate of 50 per minute, or a little above. Fatigue is rather easily induced; there is sometimes slight chest pain or tightness, sudden anxiety, swimming sensations, dyspeptic symptoms, flatulence, occasional faintness, heart consciousness, and fluttering, mostly at night, irritability, and mental depression. Nevertheless, he continues at his work, and goes about without revealing his disability to his clients, friends or associates.

*Summary.*—The diagnosis of myocardial degeneration is easily made in this patient. The etiologic factors are plentifully supplied by an hereditary predisposition, typhoid fever, diphtheria, chronic appendicitis, and especially the many attacks of tonsillitis with arthritis.

The cardiac functional capacity is, of course, below normal, as shown by his response to effort, his many slight functional derangements, and the low blood pressure. The occurrence of a single brief attack of fibrillation following alcohol, tobacco, and fatigue in a heart which before and since has exhibited premature contractions, supplies the mechanical features of interest.

CASE 5.—*History.*—W. J. G., a man, aged 52, an executive officer in a large fire insurance company, had noticed an increasing difficulty in the performance of his duties, and a gradual failure of health for three or four years. He complained of attacks of dizziness, weakness, apprehension, a feeling of pressure in the head, undue fatigue, ringing in the ears, and dyspeptic phenomena, extending over a number of years. There had been several attacks of acute arthritis, which he believed to be gouty. He also described attacks of rapid heart action, with heart consciousness, attended with weakness and fatigue, occurring periodically, beginning six years before, but much more frequent during the previous two years. The disturbance had particularly seemed to follow long hours of work, and unusually close application to trying duties, occurred as often as once a month, and would last for several days, sometimes as long as a week, disappearing with rest. His physician informed me that he had treated the patient for cardiac arrhythmia on several occasions, and that he had promptly improved under digitalis administration. The patient accounted for his heart attacks and most of his other derangements on the ground that he had been overworked; that his duties involved much anxiety and nervous stress, and said that he felt much better when away from his work. During six weeks the previous summer, he had played eighteen holes of golf almost daily without unfavorable symptoms, and with apparent benefit to his general condition.

He had been an excessive smoker until the beginning of the period of his failing health.

I first examined him, April 18, 1921. He was lean and lank. The pulse was perfectly regular, 70 a minute, the arteries somewhat thickened, the systolic blood pressure, 110; diastolic, 70. The heart showed demonstrable enlargement to the left, distant sounds, regular action, and no thrills, shocks or murmurs. The urine was clear; renal functional tests were not made. Examination by roentgen ray revealed marked apical infection of tooth roots. Dr. B. B. Vincent Lyon reported, after study, that the gastro-intestinal tract was free from infection.

*Comment.*—The diagnosis of cardiovascular degeneration with a fair degree of cardiac functional capacity seems justified. The etiologic factor, or factors, were supplied by the excessive use of tobacco, prolonged severe nervous strain and stress, and the marked grade of mouth infection. In probable relation to the latter was the occurrence of recurrent arthritis over several years. The feature of his history to which particular attention is directed is the intermittent and recurrent cardiac arrhythmia, described by himself, and observed and treated by his physician. I observed the patient in one of these attacks which came on twelve days after an electrocardiographic study had showed a normal mechanism. He exhibited the ordinary clinical and electrocardiographic features of auricular fibrillation with impaired cardiac efficiency. The disorder persisted for one week, during which time he was confined to his room and given digitalis. The return to a normal rhythm occurred over night. No premature contractions were observed at any time. Their occurrence as an explanation of the first cardiac disturbance experienced six years previously was considered; recurrent auricular fibrillation for that period of time would seem probable in this patient.

Four months later the patient had a regular pulse, although he had just recovered from an attack of arthritis.

CASE 6.—C. S. W., a manufacturer, aged 53, seen with another physician, Feb. 29, 1916, and after varying intervals until his death eleven months later, presented the signs of cardiac hypertrophy and thickening of the arteries. The blood pressure was increased; the urine contained albumin and granular casts. Following the subsidence of the febrile movement in an apparently mild attack of diphtheria, and while yet mostly confined to bed, he suffered a syncopal attack, which occurred without warning after a slight exertion. The pulse was immediately thereafter observed to be absolutely irregular, and remained so for four days during which time digitalis was administered in full doses. The disorder was shown by the polygraph to be due to fibrillation of the auricles. Auricular premature contractions occurred immediately after the period of fibrillation. A second period of fibrillation occurred two months later and persisted for forty-eight hours, followed by normal rhythm.

During the eleven months over which the patient was occasionally studied with the polygraph, he passed through five or more periods of from two to eight days during which the auricles were in fibrillation, in each instance followed by a normal rhythm after digitalis administration. He showed a lessened capacity for effort at all times, which incapacity was intensified at the periods of auricular fibrillation and necessitated his confinement to bed. Serous effusion, urgent dyspnea or other marked signs of acute heart failure were not present at any time, however. His death was apparently the result of a uremic or apoplectic seizure which occurred suddenly at a family Christmas dinner, death in unconsciousness occurring five hours later. I have no dependable information as to the heart rhythm in the terminal illness.

CASE 7.—*History.*—F. C. J., a rural traveling salesman, aged 65, of regular habits and previous good health, except for typhoid fever at 55, stated that on as many as twelve different occasions in the previous eighteen months he had intermittently suffered from "palpitation and fluttering of the heart." The seizures occurred without obvious cause, had increased in frequency, and varied in duration from eight to twenty-four hours. The attacks were accompanied by a feeling of shortness of breath, weakness, sweating, dizziness, and on three occasions fainting, with brief unconsciousness. The disorder was described as wearing off during the day, or as disappearing during the night. In no instance had the symptoms caused the patient to take to his bed. He had sometimes lessened his activities, but had continued at his affairs. Momentary heart flutterings, worse at night and of brief duration, were elicited on further careful questioning, but he did not consider their occurrence to be important. A loss of weight amounting to 30 pounds (13.6 kg.) during the previous year, dyspeptic phenomena, and nocturnal frequency of urination were other symptoms. The blood pressure had been "high," but lately had been getting less. There was no marked lessening of capacity for effort, precordial pain or swelling of the ankles. Examination showed an enlarged heart, with a faint, soft, blowing, systolic murmur above the apex, thickened arteries, a systolic blood pressure of 120; diastolic, 60, and the signs of pulmonary emphysema of moderate grade. The pulse and heart rates were 66, the beats being regularly paired (bigeminal pulse), owing to a premature beat of ventricular origin occurring every other time. Seven weeks later, the patient presented himself in one of his attacks, which had then lasted eight hours. There was a rapid and disorderly heart action, a pulse deficit, a feeling of oppression, weakness and some fatigue, although he had just driven an automobile 30 miles and had himself changed a tire on the way. There was no edema, and he remonstrated at orders to take to bed. The disordered heart action disappeared during the night without medication.

*Summary.*—The case is essentially one of primary general sclerotic processes involving the heart, arteries, kidneys, lungs and other organs, with gradual failure of health. Chronic progressive myocarditis, with frequent premature contractions and many attacks of auricular fibrillation of varying duration and increasing frequency, are the outstanding features of special interest.

CASE 8.—*History.*—T. T. W., a retired business man, aged 67, for several months had been intermittently aware of rapid and forcible heart action. During the disturbance, which was persistent for periods of a few hours to a day or more, he felt somewhat breathless on exertion, but was otherwise quite comfortable. In the intervals, his capacity for effort had been

good; he was accustomed to play eighteen holes of golf two or three times a week. He had led a well ordered, regular life, free from bad habits, considered himself free from constitutional tendencies, and had suffered no serious illness in his adult life. He was rather sparely built, was well developed, and showed evidences of a moderate degree of pulmonary emphysema; there were no cardiac shocks, thrills or murmurs; the heart rate was 130, irregular as to volume and sequence, with failure of many beats to produce a pulse wave at the wrist; the peripheral arteries were considerably thickened; the urine contained albumin and granular casts; the systolic blood pressure was between 150 and 160 mm. of mercury. Polygraphic study showed auricular fibrillation in a heart contracting 140 times a minute. He was given digitalis. Two days later the rhythm was normal except for rather frequent ventricular contractions; the blood pressure was then 170. He was comfortable throughout the succeeding summer spent at the seashore, where he continued his golf.

Sept. 29, 1915, a little less than four months after I first saw him, fibrillation of the auricles was again present, with edema of the legs and hepatic enlargement. After three weeks he was discharged from the hospital, on the disappearance of the acute signs of heart failure, but with an irregular pulse. The mechanical disorder apparently continued throughout the succeeding seven months, during which time the heart rate was controlled with digitalis, and on May 3, 1916, was certainly present, as shown by the polygraph. He continued to go about and play golf on a level course. One month later he fell dead while engaged in a game.

*Summary.*—The history presents an ordinary case of combined sclerosis of the heart, arteries and kidneys without signs of valvular disease. One paroxysm of auricular fibrillation of approximately sixty hours' duration was observed and demonstrated; others were indicated by the history. The observed paroxysm was followed by premature ventricular contractions; later, permanent auricular fibrillation with acute heart failure, recovery from the latter, and finally sudden death about one year after the observed paroxysm of auricular fibrillation.

### CONCLUSIONS

1. The foregoing observations emphasize the occurrence of transient auricular fibrillation in normal hearts, and in pathologic conditions less evident than the valvular affections.

2. The condition is probably more frequent than has so far been shown, and would explain some of the attacks of palpitation and tachycardia described by patients, as well as their occurrence in various toxic conditions, intoxications, reflex and nervous conditions, and after surgical operations.

3. A single attack is not invariably an evidence of myocarditis, and sometimes occurs in healthy hearts; recurrent attacks indicate cardiac disease, and tend to become more frequent, severe, and finally permanent.

4. Brief auricular fibrillation may be the first obtrusive manifestation and occur comparatively early in a patient with progressive cardiovascular disease without other marked evidence of heart damage.

5. Transient fibrillation of the auricles should be further investigated. Additional study and observation would advance our knowledge of transitory cardiac disorders, and probably reveal auricular fibrillation as the explanation of many imperfectly understood disturbances. Particularly inviting investigation are the disturbances of the heart following surgical operations, the disturbances of rhythm occurring in the acute infections, and various intoxication effects.

6. Digitalis, unless given in massive doses, would seem to have a limited application by reason of its slow action in an affection of short duration. The tendency to spontaneous recovery in some cases of auricular fibrillation must be borne in mind in any estimate of the value of a particular remedy, such as quinidin.

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# TUBERCULOUS CAVITATION OF THE LUNG

## MECHANICAL FACTORS IN ITS GENESIS, AND COMBINED CHEMOTHERAPEUTIC AND SURGICAL TREATMENT *

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## MECHANICAL FACTORS IN THE GENESIS AND PROGRESS OF PULMONARY TUBERCULOSIS

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Beginning with the discovery of tuberculin, followed a few years later by that of diphtheria antitoxin, a great amount of investigation along immunologic lines was done. This field of research led to much valuable information, not merely in medicine generally, but also in tuberculosis. It has had, however, the effect of laying great stress on immunity and resistance in the explanation of tuberculosis in its various forms. The mechanical factors which operated in the lungs, and which are absent in most other important organs, have been more or less generally overlooked.

Physiologically, the lungs are not divided into a right and left lung or various lobes, but into an upper and lower portion, the physiologic middle being the attachment of the trachea at its bifurcation to the spine. As Tendeloo [1] has shown, the forces that apply to the lungs in inspiration are greatest in those areas in which the walls of the thoracic cavity make the widest respiratory excursions, namely, in the region of the diaphragm and the lower lateral portions of the chest. These excursions diminish in amplitude toward the apex, until the upper part of the chest is found to move scarcely at all in the act of breathing. It is extremely doubtful whether the tip of the lung, which projects through the ring of the first rib, moves at all in ordinary respiration. The mediastinum, which anatomically separates the two lungs, has no bearing on the function of either lung under ordinary circumstances. Even if it should be stiffened and adherent as a result of a previous mediastinitis, the only influence it has on the function of the lungs is noticed when one lung is partially or completely compressed by air or fluid.

Not only do the respiratory movements have a bearing on the blood and lymph flow, but the bronchial system below the bifurcation is also influenced by them, a factor that must be considered in relation not only to the primary tuberculous infection but also to the spread of disease in the lung. In childhood, when most of the primary inoculations of tuberculosis take place, the attachment of the trachea to the spine is very high, with the result that the upper parts of the lungs constitute not more than one fourth or one fifth of the total lung capacity. The preponderance of evidence at the present time seems to indicate that the primary tuberculous infection takes place in childhood by means of aspiration of living tubercle bacilli into the lower parts of the chest, i. e., that portion of the lung below the bifurcation of the trachea. It would be only

* From the Albuquerque Sanatorium.

1. Tendeloo, N. P.: Studien über die Ursachen der Lungenkrankheiten, Wiesbaden, 1901.

logical to expect the primary inoculation to take place in this area, since various experiments on dust inhalation have shown that the larger part of inhaled particles are taken into the lower parts of the chest. The puzzling thing has been that with the majority of primary inoculations occurring in the lower part of the lung, the greater number of clinical lesions are to be found just at or above the physiologic middle.

It is becoming generally accepted that there are two quite distinct types of pulmonary tuberculosis—one, which seems to be more or less benign; the other, the malignant phthisis pulmonalis, which is responsible for approximately eleven twelfths of the deaths caused by tuberculosis. A study of roentgenograms of a large number of patients of various ages shows that in childhood the prevailing manifestation of intrathoracic tuberculosis is involvement of the bronchial glands, with more or less extension from these along the lymph channels. This extension does not reach the periphery until several years after the primary infection has taken place. When it does reach the surface it manifests itself usually at the apex, the exact point being determined to an extent by the type and shape of the thorax. This form of tuberculosis is a tuberculous lymphangitis, extending from the bronchial glands by continuity. It is an open question as yet whether there must be interference with the flow of lymph (possibly by the disease of the glands) before this extension takes place. At any rate, the extension takes place in those areas of the lung subject to the least movement on ordinary or forced respiration, and it would seem in this instance that the lack of mobility of the chest in the region where this type of tuberculosis is found has a direct bearing on its causation. The clinical picture of the peribronchial or interstitial tuberculosis, as it is varyingly called, is too well known to require repetition here. It is sufficient to say that this is the "incipient" tuberculosis of the textbooks.

Pulmonary consumption, contrary to the common conception, does not always begin at the apexes and slowly extend downward, eating its way as a cancer would. In going over our material, we find case after case presenting a comparatively free apex, with the greatest amount of consolidation or cavitation in the zone lying between the clavicle and a horizontal line drawn through the bifurcation of the trachea. The work of Nicol [2] has shown quite conclusively that these consolidations are caused by aspiration down the bronchial tree of tuberculous pus. The greater the amount of pus aspirated, the larger and more widespread are the lesions caused by it. A great number of serial sections of small parenchymatous tuberculous areas disclosed intact walls of the alveoli and bronchioli, even though the lumen was quite filled with caseous material. Roentgenographically, the large and small parenchymatous lesions, whether they occur later in the course of the tuberculosis or at the very beginning, are identical. This would seem to indicate that not merely the later parenchymatous lesions and abscesses, but also the early ones are, in the majority of cases, caused by aspiration of tuberculous pus from a preexisting focus. In a previous thesis on this topic I advanced the hypothesis that the source for most of this material is tuberculous lymph nodes.[3] I made this deduction by a process of exclusion, there being no other focus almost universally found from which tuberculous pus could be obtained. Chevalier Jackson [4] says:

> The trachea is relatively rarely involved in tuberculosis, but we may have in the trachea the pale swelling of the early stage of a perichondritis, or the later ulceration and all the phenomena following the mixed pyogenic infections. These same conditions may exist in the bronchi. In a number of instances, the entire lumen of the bronchus was occluded by cheesy pus and débris of a peribronchial gland which had eroded through. As a rule, the mucosa of tuberculosis is pale, and the pallor is accentuated by the rather bluish streak of vessels, where these are visible. Erosion through of peribronchial or peritracheal lymph masses may be associated with granulation tissue, usually of pale color, but occasionally reddish; and sometimes oozing of blood is noticed. . . . The only lesion visible in a tuberculous case may be cicatrices from healed processes. In a number of cases there has been a discharge of pus coming from the upper-lobe bronchus.

This is offered in support of the statement that tuberculous peribronchial lymph nodes may discharge their contents into the bronchus or trachea.

One constant characteristic of phthisis pulmonalis is the regular expectoration of purulent, tubercle bacilli-bearing sputum. This process continues until the broken down parenchymatous lesion, i. e., the cavity, is eliminated, or the death of the patient puts a stop to the process. In other words, a patient having persistently positive sputum over a period of time has a pulmonary cavity, regardless of the physical signs. There are two exceptions to this dictum, and both are infrequently encountered clinically: (1) discharging bronchial lymph nodes, and (2) a tuberculous bronchiectasis, usually in one of the upper lobes. Once pus, bearing living tubercle bacilli, is mobilized in the bronchial system, we have to contend with another factor which very materially aids the spreading of the disease; namely, cough. It is well to remember that there are two phases in the act of coughing, one an increase in the intrathoracic pressure, followed by a sudden decrease of the pressure when the air is suddenly and violently expelled. Observations recently made with the fluoroscope of a patient with his right lung partially collapsed would seem to indicate that this momentary decrease brings about a pressure which at its minimum is subatmospheric. When the patient was made to cough, there was no bulging of the partially collapsed lung as the intrathoracic pressure was increased. At the exact moment of coughing, however, there was a sudden though slight shrinkage of the lung, which immediately rebounded to its former position.

Similar fluctuations in pressure undoubtedly take place in every thorax during the process of coughing. There can be no doubt that these fluctuations in pressure can be responsible for aspirating or forcing pus from an open lesion into parts of the lung which are still healthy. The chest wall does not present equal resistance to pressure changes in the lung at all points. When there is an increase in the pressure, as in the first phase of the act of coughing, the extreme tip of the lung which projects through the upper thoracic aperture undoubtedly expands, the degree of the expansion being determined partially, at least, by the strength and tone of the muscles and fascia of this region. In some patients we notice also a slight bulging of the intercostal spaces at this time. In marked cases of emphysema, these phenomena can be readily observed in a degree much more exaggerated than obtains in the ordinary thorax. It is possible, then, for sputum to be forced

2. Nicol, K.: Pathologisch-anatomische und klinische Betrachtungen der Lungenphthise, Beitr. z. Klin. d. Tuberc. **30**, No. 2.
3. Gekler, W. A.: Phthisis Pulmonalis and Other Forms of Intrathoracic Tuberculosis, Arch. Int. Med. **20**: 32 (July) 1917.
4. Jackson, Chevalier: Bronchoscopy and Esophagoscopy.

along a bronchus by the increase in the intrapulmonary pressure in the first phase of coughing, and possible again for it to be aspirated by the sudden rebound in pressure that occurs in the second phase of coughing. As to whether this takes place is a matter of chance that is governed solely by the accidental position of a mass of pus on its way out from the discharging focus.

We have, then, two mechanical factors in the spread of any purulent process in the lung: one, the normal respiratory function, which varies in intensity with the physical activity of the patient and his need for oxygen; the other, the act of coughing, which cannot be entirely suppressed in any patient into whose bronchi pus is constantly being discharged. The result of these varying factors is that in any patient with tuberculous pus being discharged from an open lesion—in most instances a pulmonary cavity—it is only a question of time until, according to the law of chance, aspiration of this pus will take place into still healthy lung tissue, and in this manner the disease will be spread. In practice, we notice that patients with open discharging cavities are either killed by the step by step extension of the disease until the body is worn out by the process, or tuberculous complications, such as severe bowel, kidney or meningeal tuberculosis, make an end of the story. Of course, we frequently see profuse hemorrhages and spontaneous pneumothorax, which must be classed as pulmonary accidents, occurring as terminal events. Our whole therapy, then, should be directed toward putting an end to the mobilization of tubercle bacilli in the bronchial system. The success achieved with our present methods depends to a very large extent on the degree of completeness with which this is accomplished.

## SURGICAL ASPECTS OF CAVITY STERILIZATION

WILLIAM R. LOVELACE, M.D.

The last fifteen years has seen a number of definite advances in the surgical treatment of pulmonary diseases, particularly in tuberculosis. The work with artificial pneumothorax has been the starting point for most of the methods employed up to the present time. The brilliant results obtained in successful pneumothorax therapy led to the attempt to secure the same collapse, when adhesions prevented artificial pneumothorax, by extrapleural thoracoplasty. The original Friedrich thoracoplasty consists in the extraperiosteal resection of the ribs, from the first to the eighth, inclusive. The first patient operated on received great benefit, and was following his usual occupation two years afterward. As the shoulder girdle was not disturbed, there was little deformity apparent until the clothing was removed. In later cases the same procedure was not so effective, and the mortality was very high. The cause of death varied; in some cases the "pendulum air," as Brauer called it, resulted in slowly progressive asphyxiation; in others, the shock of the operation itself was sufficient, together with the low state of vitality of the patient, to result fatally; in still other patients there was a progressive wearing out of the heart, due possibly to a combination of the mediastinal fluttering and sudden and marked change in the mechanical conditions of the chest. The high mortality and stormy convalescence characterizing patients operated on by the original Friedrich method caused Wilms to devise his method of "columnar resection." Wilms' idea was to take off several centimeters from the ends of the ribs overlying the pathologic process in order to secure a collapse of the lung in that area. In a number of cases, very good results have been achieved in this way. One of the disastrous consequences, however, frequently encountered in this operation was the aspiration, into the lower part of the chest, of pus from the process above. This resulted in a severe lower lobe involvement, which often left the patient in worse condition than before. It was found, too, that the anterior operation was quite dangerous.

This led Sauerbruch to modify the thoracoplastic method still further by resecting as much of the rib posteriorly overlying the pathologic process as possible, and in addition resecting smaller pieces of the ribs down to the ninth, inclusive, in order to paralyze temporarily the aspiratory power of the lower lobe. This presents the most popular procedure at present; it definitely obviates the aspiration of tuberculous pus into the lower lobe, which was the inherent defect of the Wilms procedure, and it is of much less magnitude than the original Friedrich plastic operation.

Inherent in the three procedures just described are a number of possibilities of danger that cannot always be avoided. A certain amount of "pendulum air" may be encountered; the already impaired vital capacity characteristic of the tuberculous patient may be reduced to the danger point; the wear and tear on a myocardium weakened by the long period of toxemia may result fatally, and the trauma of the operation may in itself be sufficient to end the life of a weakened patient.

The posterior operations yield excellent results in cases in which the cavities are near the posterior or lateral chest wall and are not too extensive. Cavities involving the entire apex down to the second or third rib cannot be completely collapsed by any of the posterior plastic operations. This type of patient, although frequently improved after the operation, usually still shows tubercle bacilli in the sputum for an indefinite period. An incompletely collapsed cavity may readily be a source from which the disease may spread, and thus the original object of the operation, namely, to stop the process and prevent spread of the disease, is not accomplished.

As part of a plan chemically to sterilize tuberculous cavities, especially those of such size and location that thoracoplastic or other methods could not succeed, we opened tuberculous cavities in three patients for the purpose of making these cavities accessible to chemotherapeutic measures.

CASE 1.—The first patient of this series was operated on, April 22, 1923. One and one-half inches of the second rib, beginning 1 inch to the right of the sternum, was removed, together with its periosteum. The cavity was then located with an aspirating needle, and an opening was made with a thermocautery through the pleura, about three-fourths inch of intervening lung tissue, and the cavity wall. The opening was enlarged to a diameter of 1 inch by the insertion of a finger. The inside of the cavity could easily be inspected and palpated. Its appearance and feel were those of any tuberculous cavity, such as one frequently finds at the necropsy table. A large cigaret drain was inserted, and, after the dressing was applied, the patient was removed to her room. It was the intention to do this work under local anesthesia supplemented with morphin and scopolamin, but the scopolamin seemed to excite the patient, and it was necessary to give her a few whiffs of chloroform—less than an ounce of it was used. During the course of the operation, the inhalation by the patient of smoke and fumes from the cavity when the thermocautery was introduced resulted in a severe choking and coughing fit. The enlargement of the opening by the finger resulted in the tearing of the pleura where it was not completely adherent, and a small pleural pocket was opened which later gave some trouble.

There was no shock connected with the procedure, and the patient quickly regained consciousness. Furthermore, there was no difficulty in breathing, and none of the embarrassment of the heart so common following thoracoplastic operations.

CASE 2.—A second patient was operated on, Aug. 11, 1923. This patient presented as poor a surgical risk as one could wish. Her cavity was on the left side, and in general the method employed in the first case was used. Instead of enlarging the opening into the cavity with the finger, a block of tissue through the chest wall and cavity wall 2 cm. in diameter was removed with a thermocautery, and the tissues thoroughly seared. We feel that had there not been complete adherence of the two layers of the pleura, the searing with the thermocautery resulted in sufficient adhesions to prevent the opening of any pleural pocket. To obviate the coughing caused by the inhalation of smoke and vapors produced by the searing of the tissues, a small rubber catheter attached to a suction apparatus was inserted as soon as the cavity was reached, and the smoke and fumes were sufficiently well cleared from the cavity to obviate any cough reflex. At the same time about 1 ounce of pus in the bottom of the cavity was aspirated, so that even had there been some coughing, aspiration of this pus was made impossible. No inhalation anesthesia was necessary. While the postoperative course of this patient was more or less trying and alarming, we feel that this was not due in any way to the operation, and was caused as much by the extremely toxic general condition of the patient as by anything else.

CASE 3.—A third patient was operated on, Sept. 9, 1923, under the modified procedure used in Case 2. Instead of our merely being content with the division of the pectoral muscles, a segment about 0.5 cm. wide and 3 cm. in length was removed to facilitate the later chemotherapeutic treatments. This patient had some morphin and heroin previous to the operation, and was fully conscious during the entire procedure and able to converse and joke with those in the operating room. She reported less pain than she had felt with tonsillectomy. The only postoperative sequela was some vomiting and nausea due to the opiate. This lasted several hours, and at no time since the operation has this patient had a narcotic of any sort. In all three of these patients, there was a postoperative rise in temperature, which is to be expected in view of the trauma to the tissues. Beyond this, and the pain and discomfort caused by the wound itself, there have been no complications of any sort.

The surgical opening of the cavity, together with the chemotherapy carried out by the staff of the Albuquerque Sanatorium, have proved an entirely safe procedure in the three cases treated up to date. As compared with any of the thoracoplastic methods, all of the dangers and alarming sequelae of these methods have been obviated in our procedure. Furthermore, these three patients presented cavities of such size and location that nothing but a plastic operation as extensive as the original Friedrich operation could possibly secure sufficient collapse of these cavities to achieve their eradication. In Case 1, active disease on the other side would have made the Friedrich operation unwise and dangerous, and in Case 2 the extremely bad general condition of the patient would not have tolerated anything but the mildest sort of procedure. There was very little hemorrhage in any of these three cases, and none caused by going through the lung. Not more than 15 c.c. of blood was lost by any one of the three.

Surgeons generally consider tuberculous processes a *nole me tangere,* particularly thoracic tuberculosis; but our experience with these three patients has been much less trying than with the average nontuberculous lung abscess, and certainly, both from a technical standpoint and from the standpoint of the patient, better than any of the various plastic procedures. The fact that the opening surgically of pulmonary, tuberculous cavities is an unusual procedure was felt to justify this brief report.

### CONCLUSIONS

1. The opening of tuberculous cavities in the three cases reported has been an entirely safe procedure.
2. It is essential to make the opening through the pleura, intervening lung tissue and cavity wall with a cautery, and to avoid any tearing of the tissues.
3. The use of the cautery obviates the possibility of hemorrhage, as well as infectious material getting into the circulation.
4. The existence of extensive adhesions must be ascertained before it is safe to attempt opening a cavity.
5. Technically, the operation is not more difficult than rib resection of empyema.
6. There is absolutely no shock connected with the procedure, which should be done under local anesthesia, and in the three cases there have been no postoperative sequelae, due to the operation itself, which have in any way embarrassed the patients.

## CHEMICAL STERILIZATION OF LARGE TUBERCULOUS PULMONARY CAVITIES

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AND
B. J. WEIGEL, M.D.

We frequently encounter patients in whom the tuberculosis consists largely of one or more cavities, the walls of which are quite thick and from which tuberculous sputum is constantly produced for an indefinite time. If the period of observation is extended long enough, one finds that ultimately the disease spreads, as outlined in the first paper, and tuberculosis progresses until death takes place. In a health resort town, such as Albuquerque, there is always a certain number of persons of this type. They are persons who have been fortunate enough, for the time being, to escape the spread of the disease, and who are most certainly exceptional cases. One hears nothing of those with whom the extension took place more promptly, and who have died. In view of the certainty that events as described under the spread of tuberculosis will take place, we are faced with the practical problem of taking measures that will in some way put a stop to the production of tuberculous pus, and make impossible the later events, which, experience shows, invariably take place. Pneumothorax therapy, when feasible, has rendered excellent service. Many of these patients, however, are not amenable to pneumothorax therapy on account of adhesions which hinder an efficient collapse; and, on account of the operative risk as well as the resultant deformity, one hesitates to go to the extent of securing a collapse of the cavity by means of the various plastic operations that have been devised for this purpose.

The success achieved with chemotherapy in empyema for several years, particularly the success achieved in one case of lung abscess by direct application of gentian violet to the abscess itself through an operative fistula, suggested the possibility of direct application of antiseptics to the interior of one of these pulmonary cavities in the hope of sterilizing the cavity, and thus rendering spread of the tuberculosis by aspiration of pus from the cavity impossible.

In April, 1922, an attempt was made to accomplish this by inserting a needle through the chest wall into a large upper lobe cavity, and injecting a concentrated

solution of gentian violet in distilled water containing 10 per cent. alcohol. The dye seemed to cause no irritation or pain, which is to be expected in view of the absence of sensory nerves in the cavity wall; but in this first case the mistake was made of putting too much dye into the cavity so that some of it overflowed into a bronchus, setting up a very severe fit of coughing, which resulted in a mixture of dye and pus being aspirated into other parts of the lung. In this case, it seemed that we did the patient definite damage, and he has since died. Another attempt was made on another patient (Case 3 of this series), this time 15 c.c. of the dye solution being used. This patient was kept on the affected side for twelve or fifteen hours afterward, and, of course, pus stained with the violet was expectorated for several days. Even when mixed with the pus and probably chemically combined with it, the dye proved very irritating and set up a mild chemical bronchitis, which soon subsided. This discouraged us from further attempts at application of the gentian violet or other antiseptics in this manner.

Gentian violet was used in this work on account of its affinity for gram-positive organisms, and on account of the fact that we had had several years' experience with the use of this compound in treating empyema. We knew that even concentrated solutions were not destructive of tissue, and our problem was to keep the dye in contact with the tubercle bacilli in as great a concentration as possible over a sufficient period of time to kill the bacteria. In view of the protective action of the body fluids, there was no means of knowing beforehand what length of time would be required; but, if our experience with empyema was to be used as a criterion, it would take several weeks to several months. It was out of the question to apply the dye several times a day to the interior of the cavity wall through a needle, and have the bronchial irritation continue over this length of time. It was this which led us to consider making a fistula through the chest wall into the cavity surgically, through which to apply the dye and to remove the fluids and débris that accumulated in the cavity.

Tuberculous cavities have been opened in the hope that drainage through the chest wall would result in their cure the same way that such drainage occasionally results in the cure of empyema. It was found, however, that this method of approach was not successful; indeed, this was only to be expected in view of the fact that the bronchus leading into a cavity usually in itself provides quite satisfactory drainage. The opening of the cavity surgically seemed to be a procedure involving very little risk to the patient and easily done. Bearing this in mind, we searched through our material for a patient who was willing to permit us to make an opening of this sort and apply the dye locally. We were finally fortunate enough to find a young woman with a cavity in the right apex extending below the second rib, whose lung it had been impossible to collapse on account of extensive adhesions. There was other tuberculosis in the left lung, but the cavity was the chief source of her sputum, and it was impossible to make any attempts either by pneumothorax or postural rest to treat the tuberculosis on the left side until the cavity on the right was made nonproductive.

CASE 1.—Accordingly, Dr. Lovelace, assisted by the sanatorium staff, opened the cavity, April 22, 1923, as described in preceding discussion on the surgical aspects of cavity sterilization. The next day a glass tube with a flange was inserted. On account of the discomfort resulting, we had to stop using glass tubes after a few days and try to use a rubber one. This was too stiff and also caused a great deal of discomfort, so that we returned to the cigaret drain.

Unfortunately, there was a small area about 2½ inches in diameter, where the two layers of the pleura were not adherent and separated toward the axilla. An exudate promptly put in its appearance, discharging into the cavity. For several days the amount of the exudate was as much as from 4 to 6 ounces. The wound was dressed daily and nothing further was done until the amount of this exudate seemed to diminish. The lung tissue, through which the opening went into the cavity, showed a moderate degree of anthracosis, and was studded with small tubercles. May 4, we began regular treatments at intervals of three hours with a saturated solution of gentian violet in 10 per cent. alcohol and distilled water. The members of the sanatorium staff took turns in giving the treatment, which was done throughout the twenty-four hours until midnight of May 7. Beginning May 8, the treatment was given three and four times a day until June 1. For the application of the dye we used atomizers, and the treatment consisted, first of all, in aspirating through a catheter attached to a 10 c.c. syringe the secretion and débris that had accumulated in the cavity since the previous treatment. Then the walls of the cavity were washed down with physiologic sodium chlorid solution, also applied with an atomizer; this was then aspirated out and the walls thoroughly saturated with the gentian violet solution, the excess dye being removed with the catheter. The wound through the muscles and around the opening in the chest wall was also kept saturated with the dye.

There was some temperature reaction following the operation and during the period when the pleural slit drained freely. Since that time the temperature has usually been normal to 99.

After the use of the dye in the cavity was discontinued, the wound was dressed once daily, and the cavity walls washed down as described. The external wound was sprayed with the gentian violet solution at each dressing to keep down any infection there. Even while the dye was being applied in the cavity, we soon noticed small areas which did not take the dye well and which were of grayish pink. These areas increased in number and size until the dye was discontinued. By the middle of June almost all of the internal surface of the cavity was largely covered with pink and red granulations, from some of which a very small amount of blood could be seen to ooze. The channel through the lung tissue into the cavity had become entirely covered with clean granulations. Repeated smears were negative for tubercle bacilli or other organisms. The material for these smears was scraped from the side of the cavity wall with a platinum loop. A culture made, June 12, by washing down the sides of the cavity with sterile saline solution and then centrifugalizing this fluid, yielded *Micrococcus catarrhalis*, which quite possibly was coughed into the cavity from the two small bronchi leading into it.

June 13, material scraped from a small grayish area on the wall of the cavity showed twelve tubercle bacilli on a total of five slides. June 15, treatment was resumed, this time with a 4 per cent. solution of medicinal methylene blue in 5 per cent. glycerin, 15 per cent. alcohol and 80 per cent. distilled water. The change was made from gentian violet to methylene blue on account of the fact that in our experience in empyema we found that such a change often was beneficial. It seems that after a micro-organism has become accustomed to a certain chemical compound this compound becomes less efficient, and a change to a different material results in more rapid killing. We found that medicinal methylene blue has the same inhibiting action as gentian violet. Another advantage of the methylene blue lies in the fact that it is possible to get a more concentrated solution of this material. This was continued twice daily for ten days and the dye again allowed to fade out of the cavity wall. It may be of interest to know that the urine was stained with methylene blue within twelve hours after the first application of this material, and remained stained until several days after its use was discontinued. From that time on tubercle bacilli were not demonstrable in any of the smears made from the cavity wall. After a week or ten days all of the dye had faded, and the entire internal surface of the cavity was covered with thymol iodid with a powder blower in the

hope that this would dry up the secretion and stimulate the formation of healthy scar tissue. The use of this material had to be discontinued on account of an annoying rash which appeared shortly after its use was begun. After the thymol iodid had not proved satisfactory, nothing further was introduced into the cavity to sterilize it or influence it in any way, and the sole treatment has consisted in washing out once daily with physiologic sodium chlorid solution. On an average of once a week, the external wound has been painted with a solution of gentian violet, and a gauze drain has been lightly packed into the external opening.

The external opening through the chest wall has never shown any gross evidence of tuberculous or other infection. The muscles retained their normal color, and the wound was nonproductive except for a slight serous exudate caused by the mechanical irritation of the gauze pack. Before the operation, we had anticipated some difficulty in getting this external wound to close ultimately or in preventing its becoming too large. We found that it was very difficult to keep the wound from closing as long as infection was kept down.

A series of roentgenograms shows a progressive shrinking in the size of this cavity, until now it is little more than a sinus leading into the chest wall and through the lung. There is no evidence of any sort of infection in the cavity, and no pus has been produced in it for the last three and a half months. The patient's general condition continues to improve steadily. For the last two months this patient has been on intensive postural rest for the lesion on the left side, and there has been a gratifying drop in the amount of discharge from the several small cavities she had in this area, and roentgenographically the left lung has shown signs of clearing up.

CASE 2.—In the latter part of July, 1923, a girl, aged 17 years, was admitted to the sanatorium with a history of tuberculosis dating back several years. Her general condition was poor and she raised from 6 to 8 ounces of pus daily, which shortly acquired a very vile odor. Her temperature fluctuated from 100 to 103 each afternoon, and was usually slightly above normal in the mornings. Physical examination showed a massive infection on the left side, and a few scattered râles over the right upper lobe. Roentgen-ray examination showed a cavity taking in the entire apex to the second rib on the left side, with some interstitial involvement on the right. Below the cavity on the left side the pleura was very much thickened, so that the condition of the lung beneath could not be determined. Several attempts at pneumothorax therapy were made, and proved unsuccessful on account of pleuritic adhesions. The condition of the patient was such that no hope was held out to her family for any improvement, and the sterilization of the cavity was mentioned to them but not advised. As a last resort, they requested us to undertake a cavity sterilization. Accordingly, August 11, Dr. W. R. Lovelace opened the cavity under local anesthesia, reinforced with morphin and heroin hypodermically. The pleura was thoroughly adherent, and an opening 3 cm. in diameter was made directly into the cavity, which extended to the pleura. On account of the vile odor of the pus obtained from the cavity, gentian violet therapy was started, August 13.

After the operation we found that there had been some puffiness of the girl's feet a day or two before operating which had not been reported to us, and which probably would have deterred us from any surgery had we known it. Her general condition was poor. All in all, one will seldom find a worse surgical risk than this girl presented. August 15, the swelling of the feet had increased, and there was beginning puffiness of the hands, as well as some cyanosis. The pulse was thready and weak, and the rate was rapidly increasing. By August 17 it looked as though the patient would die within twelve hours. The edema had extended to the ankles, the fingers were cyanosed, the temperature was 94, and the pulse from 140 to 150 and of very bad quality. A rectal drip was instituted and a tincture of digitalis (digitol), 8 minims (0.5 c.c.) along with strychnin, 1/40 grain every four hours. This patient had been receiving 1/6 grain of heroin every four hours for several months before coming to us, and was kept under the influence of an opiate constantly. August 18 there seemed to be a slight change for the better, and the temperature arose above normal. August 19 and 20, the temperature reached 102, with some improvement in the pulse and general appearance of the patient. Since then her condition has slowly but steadily improved.

Immediately following the operation there was a complete cessation of all sputum for twenty-four hours, following which there was for several days an increasing amount of sputum of the same character as that which had been produced before the operation. The tissues in the chest and also around the external wound were exceedingly friable and cadaverous in appearance, and during one of the dressings, when the pus was being aspirated with a rubber catheter, an opening was apparently made into another cavity, which had not previously been reached. From that time on the sputum has been mucoid with a few streaks of grayish pus through it, and the amount does not exceed an ounce a day. The drainage from the cavity itself is now odorless, and is much thinner than it was, and is decreased in amount to less than one-fourth the former amount. A recent roentgenogram shows a decrease in the size of the cavity to less than one-half what it had been previously. The condition in the right lung is substantially unchanged.

CASE 3.—A woman became ill with tuberculosis in February, 1918, following grip. She went to Saranac Lake in August, 1918. Artificial pneumothorax was begun on the right side in December, 1918. Pneumothorax therapy was continued until December, 1920. In September, 1919, a laparotomy was done at which time a tuberculous appendix was removed, and some of the adjoining intestine was resected for the same condition. The patient came to Albuquerque in February, 1921, with signs of a well fibrosed lesion on the right and a large cavity in the left upper lobe. This patient tried postural rest treatment for eight or ten months, and then an attempt was made to collapse the left lung, but it was unsuccessful. In April, 1922, an attempt was made at chemical sterilization of the cavity by the injection through a needle of gentian violet as described previously, and this also was unsuccessful. By August, 1923, the cavity in the left upper lobe extended from the third rib to the apex, and took in practically the entire lung in this region. Any severe operative strain was absolutely contraindicated on account of the fact that at some time in her history she had had an adhesive pericarditis, which resulted in some cardiac hypertrophy and tachycardia on the slightest exertion. On various occasions a loud systolic whistle was heard, and this occasionally became intense enough to be audible half way across the room. She reentered the sanatorium, September 8, and the cavity was opened, September 9. At this time there was a daily afternoon temperature of from 99 to 101. Her general condition, while better than that of the preceding patient, was not at all good. She expectorated from 3 to 5 ounces of tuberculous pus daily from the cavity. For three weeks the cavity was treated twice daily with the gentian violet solution, and after that with a 1 per cent. solution of medicinal methylene blue in water. As in the previous two cases, the material first removed from the cavity after the gentian violet was started was thick and jelly-like in consistency. On several occasions it was impossible to aspirate it even through a moderate sized catheter, and it was found necessary to institute postural drainage through the opening to get the cavity empty. Within ten days, the material had become quite thin, and the drainage is steadily decreasing. The patient's general condition is improving, her temperature is subsiding, and she is comfortable. She raises a small amount of sputum, but it is all stained with dye, indicating that it comes from the cavity. The cavity is of irregular shape; we have been unable to inspect every bit of it, and it is difficult to keep the patient on her left side constantly in order to prevent drainage through the bronchus. The amount of this sputum varies from one-half to 1 ounce daily, and it gives no particular trouble.

## SUMMARY

1. The production surgically of a fistula through the chest wall into a pulmonary cavity results in no disturbance of the mechanics of the thorax. It does not throw any increased burden of work on the other lung or on the heart, and active disease on the other side is not in itself a contraindication, provided it is not too extensive.

2. The gentian violet solution has an action very much akin to that of surgical solution of chlorinated soda (Dakin's solution) in bringing away necrotic and sloughing tissue.

3. It will definitely control the usual secondary infection to be found in a tuberculous cavity, and also kill off most of the tuberculous infection. Methylene blue, following the gentian violet, seems to have an even more markedly deleterious influence on the tubercle bacilli, and its free use in a 4 per cent. solution does not damage the tissues or inhibit the process of repair. Its absorption through the cavity wall, as demonstrated by its appearance in the urine, offers some light on the rapidity of absorption of toxic substances from a tuberculous cavity.

4. While three cases are not sufficient to demonstrate the value of any method, we feel that in Patient 1 we have definitely sterilized the cavity wall, which was the object of this procedure. The shrinkage of the cavity, which has been quite rapid and extremely marked, was unexpected and we offer no explanation for it. We should have been content with sterilization alone without obliteration, but the two together have certainly eliminated this large cavity as a possible source for further extension of tuberculosis in this case. The course of Cases 2 and 3 have been the same as in the first case up to the present time, and we have every reason to believe that the walls of the cavities can be as efficiently sterilized in these cases as in the first case. Of course, sufficient time has not yet elapsed to ascertain what will be the ultimate fate of these cavities, but up to this time the course of events has been distinctly favorable. Further reports will be made from time to time as our experience in this work increases.

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## ARTERIOSCLEROSIS IN THYROID DEFICIENCY *

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In contradistinction to the manifold and clinically significant disorders of circulation in exophthalmic goiter, the cardiovascular system has not, as a rule, been regarded as presenting marked deviations from the normal during the course of hypothyroidism. Most current accounts dismiss the subject with the mere statement that there are evidences of circulatory asthenia with low blood pressure. *A priori*, one would expect a low blood pressure in myxedema, the lowered basal metabolism characterizing the disease being a measure of the slow rate at which the vegetative functions are carried on. It is my object in the present communication to point out that in myxedema there are well marked anatomic changes in the arteries, and that in a large proportion of the cases there may appear the typical clinical picture of hypertension with the consequences it entails, such as myocardial insufficiency and cerebral hemorrhage.

A survey of the necropsies reported in cases of myxedema—most of which are to be found in the older literature before Murray introduced the substitution therapy with thyroid extract—reveals that a majority exhibit marked arteriosclerosis and arteriosclerotic changes in the kidneys, usually designated as chronic interstitial nephritis. In the first case of Ord,[1] who named the disease, he states that the patient died "with symptoms of contracting granular kidney." Similar vascular and renal changes are to be noted in the necropsies reported by Barling,[2] Gordinier,[3] Hun and Prudden,[4] and others. Eppinger [5] and Bourneville,[6] among others, have noted the frequency of arteriosclerosis in myxedema. The Myxedema Commission of the Clinical Society of London [7] observed how common renal sclerosis is in myxedema, but did not consider it of importance because of the advanced age of most sufferers from the disease. But the case reported here, owing to the youth of the patient, invalidates this explanation. Furthermore, Kocher,[8] in one of his classical papers on the effects of thyroid extirpation, noted that, in cachexia strumipriva, arteriosclerosis is common.

Experimentally, von Eiselsberg [9] observed long ago that thyroidectomized sheep and goats show arteriosclerosis. Similar experiments were carried out by Pick and Pineles,[10] who produced extensive atheroma and calcification of the larger vessels by removing the thyroids of young sheep and goats. An interesting and well controlled series of experiments was performed by Blum.[11] This observer thyroidectomized forty-six dogs; in thirty-six of the animals, renal sclerosis developed. The only animals that failed to show evidences of sclerotic changes were those succumbing soon after the operation. In general, the longer Blum's animals survived, the more marked was the renal fibrosis.

Certain results obtained in the therapeutic administration of thyroid extract are of interest in this connection. Percy [12] reported a case presenting the classical picture of chronic interstitial nephritis, which he considered it, in which the administration of thyroid extract was followed by disappearance of the albuminuria and lowering of the blood pressure from 190 to 145 mm., at which level it still remained three years after. But he states explicitly that the patient had a cystic goiter which was markedly reduced in size by the thyroid therapy. Quite evidently this was a case of thyroid insufficiency with vascular and renal complications. Reduction in the size of greatly dilated hearts in cases of myxedema (so-called Myxödemherz) by thyroid therapy has been reported by Zondek,[13] Assmann [14] and others. It is quite probable that some part in the pathogenesis of these dilated hearts may be played by vascular and renal changes of the nature described above. However, in only a minority of the cases reported was there hypertension, and the typical electrocardiographic changes (absence of the P and T waves, which returned with thyroid medication) indicate that the thyroid deficiency has a directly deleterious effect on the specific musculature of the heart.

It is seen, then, that there are various anatomic, experimental and clinical findings pointing to loss of the thyroid secretion having among its consequences injury

* From the Medical Division of the Montefiore Hospital.

1. Ord, in Allbutt's System of Medicine, Ed. 1, London **4**: 471, 1897.
2. Barling: Lancet **2**: 160, 1888.
3. Gordinier: New York M. J. **56**: 169, 1892.
4. Hun and Prudden: Am. J. M. Sc. **96**: 1, 1888.
5. Eppinger, in Lewandowsky's Handbuch der Neurologie, Berlin, **4**: 107, 1913.
6. Bourneville: Arch. de neurol. **16**: 9, 1903.
7. Tr. Clin. Soc., London **21** (supplement): 45, 1888.
8. Kocher: Arch. f. klin. Chir. **29**: 254, 1883.
9. Von Eiselsberg: Arch. f. klin. Chir. **49**: 216-222, 1895.
10. Pick and Pineles: Tr. XXV Kong. f. inn. Med., 1908, p. 360.
11. Blum: Virchows Arch. f. path. Anat. **166**: 408, 1901.
12. Percy, J. F.: Thyroid Extract in Nephritis, J. A. M. A. **59**: 1708 (Nov. 9) 1912.
13. Zondek: München. med. Wchnschr. **66**: 681, 1919.
14. Assmann, H.: Das Myxödemherz, München. med. Wchnschr. **66**: 9, 1919.

to the vascular system. This connection seems to be definitely demonstrated in the case here reported, which was studied in the medical (Dr. B. S. Oppenheimer, director) and the laboratory (Dr. David Marine, director) divisions of the Montefiore Hospital:

## REPORT OF CASE

*History.*—J. C., a man, aged 21, had never been sick prior to the present illness. The family history presented nothing of significance. The only relevant item in the past history was that he had never had sexual desire or erections. The onset of the present illness was at the age of 16, five years before admission, when the patient noticed that he was getting markedly fatter in the face and trunk, though the extremities remained stationary in bulk. This was also observed by relatives. The patient rapidly grew stouter and weaker, and felt that his legs were not strong enough to support his body. One month after he noted the onset of the obesity, the patient had to stop work as a switchboard operator, and had been confined to bed ever since. He was treated by physicians with various glandular products, but there was no improvement.

*Physical Examination.*—Though the patient was 21 years of age, he appeared no older than 12. He was only 4 feet, 7 inches (140 cm.) in height. The trunk and face were very obese, but the extremities were notably thin, the disproportion being very striking. The body was covered by long, fine lanugo hair, this being particularly abundant over the dorsal surface of the trunk and the limbs. The hair of the scalp was very fine; it extended down over the supra-orbital ridges to the eyebrows. There was only a very fine indication of a mustache, and no hair on the chin. The pubic hair was of feminine distribution, and covered a thick fat pad resembling a mons veneris.

The skin was very dry and scaly. From each knee downward were purpuric blotches. There were ulcerations on both pretibial surfaces.

The cardiac dulness was enlarged to the left, and there was a blowing systolic murmur at the apex. The second sound was accentuated at the aortic area. The systolic blood pressure was 175; diastolic, 135.

No lymph glands were palpably enlarged. The penis and testes were very small. The urine showed a specific gravity of 1.014; there was no sugar, albumin or casts.

Roentgen-ray examination of the skull revealed marked diffuse rarefaction throughout the entire cranium, but the sella was rather small.

The patient developed evidences of bronchopneumonia. Circulatory insufficiency rapidly appeared, and he died three weeks after admission. The clinical diagnosis was of a pluriglandular syndrome.

*Necropsy.*—The panniculus adiposus was very thick. The thymus was completely replaced by fat.

The thyroid was of good size, each lobe measuring 4 by 2.5 by 2 cm. The consistency was somewhat less than average. Microscopically, it was seen that most of the acini had been replaced by fat cells. Those remaining showed varying degrees of atrophy. In places there were nests of epithelial cells with pyknotic nuclei. Some of the surviving acini had ruptured with resulting escape of colloid into the stroma. The intact acini were filled with colloid.

The heart weighed 350 gm., being very large in comparison with the other organs (the spleen weighed 40 gm., the liver, 850 gm.). The left ventricular wall was thickened, and the myocardium exhibited small scars. On the aortic leaflet of the mitral valve was a large, atheromatous patch. The arch of the aorta and the larger branches of the coronaries exhibited marked atheromatous changes.

There was extensive bilateral bronchopneumonia, with abscess formation. The liver, spleen, pancreas and suprarenals exhibited no significant changes macroscopically.

The kidneys together weighed 200 gm. Though the capsule stripped readily, the surface showed irregular, fine granulations. Microscopically, the arteries ranging in size from the vasa afferentia to the arcuate arteries were markedly thickened. This was almost entirely due to hyaline and fatty change in the intima, to which was occasionally added hypertrophy of the medial musculature. An elastin stain showed manifold reduplication of the internal elastic lamina (Jores' hyperplastic type of intimal thickening). There were wedge-shaped areas near the surface of the cortex in which the glomeruli had undergone hyalinization and fibrosis. Many tubules were atrophied; others showed moderate degrees of epithelial degeneration and desquamation. The van Gieson and Mallory preparations showed a well marked interstitial fibrosis.

The suprarenals presented no significant changes.

In the brain, a large, apparently recent hemorrhage was found in the region of the right external capsule and lenticular nucleus. The hemorrhage extended back for a distance of about 6 cm. and was about 2 cm. in diameter. In the region of the hemorrhage was a rigid, almost pipe stem artery.

The pituitary body was apparently normal.

There was no enlargement of the lymph glands. The testes showed diminished spermatogenesis.

Microscopic examination revealed a generalized arteriolosclerosis, most intense in the kidneys, spleen and pancreas. The smaller and smallest arteries, corresponding in size to the vasa interlobulares and afferentia of the kidney, showed fatty and more particularly hyaline thickening of the intima, with often well marked medial hypertrophy.

## COMMENT

The patient, then, presented two seemingly discrete symptom complexes, an anatomic equivalent for each being found at the necropsy:

1. A hypertensive syndrome with a diastolic blood pressure of 135, cardiac hypertrophy and cerebral hemorrhage; corresponding to this there was found at the necropsy generalized arteriosclerosis and beginning primary contraction of the kidneys.

2. Sudden onset of adiposity of a peculiar distribution with retardation of skeletal and more particularly genital development, as well as abnormal distribution of hair. These phenomena point unequivocally to an endocrine disturbance, and at necropsy there was found a very extensive atrophy of the thyroid gland, with no other evident anomalies of the endocrine organs.

Are these two sets of phenomena really as totally dissociated as would seem at first glance? Extensive generalized arteriosclerosis of both the larger and smaller vessels with hypertension and cerebral hemorrhage are exceedingly rare at the age of 21, aside from instances of glomerulonephritis, which condition was not present here. Nor is myxedema (or perhaps we should say hypothyroidism, for there was no change in the skin) common at this age; so that on mere statistical grounds is seems probable that the cardiorenal and endocrine disturbances are correlated. When the case is viewed in the light of the clinical, pathologic and experimental findings summarized above, there seems little room for doubt of the causative agency of the thyroid deficiency in the production of the arteriosclerosis.

In this case not only were the larger vessels atheromatous, as in the ordinary senile arteriosclerosis, but also the arterioles in the various organs were thickened. This is the usual finding when high blood pressure has existed for a protracted period, and, in fact, this case did present very marked hypertension. It cannot be said in the present instance, any more than in the usual case of hypertension, what is the interrelation between the hypertension and the arteriolosclerosis with its resultant renal sclerosis. But that this very frequent combination of hypertension and generalized arteriolosclerosis is due in certain, even though rare, instances to a disorder of internal secretion is of great interest for the study of the pathogenesis of so-called essential hypertension in general.

170 West Fifty-Ninth Street.

# DERMATITIS VENENATA FROM THE LACQUER ON THE BOXES OF MAH JONGG SETS

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The development of a cutaneous inflammation subsequent to contact with a chemical is, of course, familiar. The term dermatitis venenata is applied to the various conditions due to chemical irritation. Recently I have observed several cases in which it was apparent that the instigating chemical agent was present in the lacquer on the boxes of mah jongg sets. It is my purpose in this communication to call attention to this etiologic factor in the production of a form of dermatitis which promises to become common.

## REPORT OF CASE

J. B., a man, aged 26, a silk salesman, was referred by his physician as suffering from a vesicular inflammation of the skin. The history, as described, was that for one week the eyelids had been swollen, and that the skin of the adjacent cheeks had shown vesicles on an inflammatory base. Similar lesions had developed prior to this on the fingers and hands. The attending physician, who was a competent diagnostician, wished to exclude an atypical form of herpes because the patient had recently had an attack of encephalitis. He had also eliminated a drug eruption, as no drug had been ingested for at least two months. Other vesicular dermatoses were readily ruled out of the discussion.

The patient was in excellent physical condition excepting for a slight facial palsy and the dermatologic condition.

Both eyelids were swollen, bright red, edematous and vesicular. The skin of the nose and adjacent cheeks was erythematous, elevated and studded with small and large vesicles. The fingers of both hands were covered with red, crusted, vesicular, fissured patches, which faded into the surrounding normal skin. Small, scaly, erythematous patches were also present on the shaft of the penis. The patient complained of burning and intense pruritus.

The history of a possible exposure, the sudden onset of acute catarrhal symptoms, the absence of signs of any other dermatologic entity, the distribution of the lesions and the tendency of the lesions to involute under alkaline baths which the patient had employed warranted a diagnosis of dermatitis venenata. At that time two agents were considered as possible excitants, a new hair tonic and a new mouth wash.

Under treatment with wet dressings and an alkaline lotion, the lesions dried and showed rapid involution. However, about one week after the patient was seen there was a recurrence. When I entered the patient's home the morning following the onset of the fresh outbreak, my attention was attracted by a beautiful mah jongg set in a lacquered box. Investigation showed that this set had been purchased three days prior to the first attack and, subsequent to the first consultation, the game had not been played until the evening before the recurrence. In view of this, a diagnosis of dermatitis venenata from contact lacquer was made. This was confirmed by the subsequent course of the condition; under alcoholic and alkaline local applications and avoidance of contact with the lacquer there was a rapid subsidence of the inflammatory reaction and no recurrence.

In this case, skin tests were not made to determine the reactivity of the skin to a solution of the lacquer.

## COMMENT

Dermatitis venenata includes all the inflammatory conditions of the skin that are caused especially by a chemical agent. Most cases of dermatitis venenata resulting from contact with plants are caused by the *Rhus* group.

Toyama [1] stated that the plants of the *Rhus* family, which in Japan grow wild, consist of the following six kinds: (1) *Rhus tricocarpa* et *Rhus tricopara* var. *serrata;* (2) *Rhus semalata* var. *osbeckii;* (3) *Rhus toxicodendron* var. *radicans;* (4) *Rhus sylvestris;* (5) *Rhus vernicifera,* and (6) *Rhus succedanea. Rhus toxicodendron* and *Rhus vernicifera* are the most injurious plants. He showed as a result of his studies that the harmful compound of *Rhus* is its principal one, and is also found in the lacquer.

The Chinese and Japanese employ as a varnish in their lacquer work an extract from *Rhus vernix.* Toyama named this harmful chemical agent urushiol. This is an acid glucosid and is the principal ingredient of the lacquer. It is not a volatile substance, and its effect on the skin may occur after handling the plant or dried varnish. He was able to produce a dermatitis with lacquer taken from an antique jar which had been buried in a Japanese room for about a thousand years:

The skin changes may be produced by the introduction of lacquer or urushiol, even in minute particles, and its subsequent oxidation, beginning about hair follicles or sweat pores, through which they enter and produce pathologic changes in the epidermis and corium and later in the other tissues. The lesions appear clinically within a few hours to a week after contact, and usually manifest themselves on the exposed parts, as the neck, face and hands, and the genitalia. The clinical symptoms that may develop as a result of exposure to the lacquer vary, and depend on the individual susceptibilities and the duration of the contact. It may be here noted that the dermatitis does not follow handling of all boxes containing mah jongg sets, but only those which are covered with the Japanese lacquer. These are usually imported, and are the most beautiful and expensive.

Shortly after exposure, burning and pruritus are noticed. The symptoms do not differ from those occurring in a dermatitis from any other plant chemical. In mild cases there may be only erythema; in severe cases this is associated with swelling, edema, vesicles and bullae.

After a few days, the erythema diminishes, and the vesicles either rupture or desiccate and form crusts. Finally, desquamation occurs. Usually at the end of two or three weeks, all evidence of the inflammation disappears. In those who are susceptible, a recurrence may develop after each exposure.

In the diagnosis of the specific agent producing the dermatitis, it may be of some value to test the skin reaction by means of solutions of the suspected chemical.

In the treatment of mah jongg dermatitis it is necessary to neutralize or destroy the offending chemical and use measures like powders, lotions, and wet dressings to overcome the catarrhal inflammation of the skin. An alkaline wet dressing or alkaline bath acts best in meeting all the indications. Toyama advised an alkali, nitric acid or sugar of lead for the neutralization, or the destruction of the urushiol. After the application of an alkali, the lacquer, where it adheres to the skin, may appear as black spots or lines, and this may be removed by the application of an alcoholic solution of 1 per cent. of nitric acid. Then the skin may be washed with soap and water, and a wet dressing, such as Burow's solution, used.

63 West Seventy-Third Street.

1. Toyama, I.: Poisonous Element of the Rhus Vernicifera (Japanese Lacquer Tree) Rhus Dermatitis, J. Cutan. Dis. **36**: 157 (March) 1918.

## DERMATITIS VENENATA FROM THE LACQUER ON THE BOXES OF MAH JONGG SETS

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The increasing popularity of mah jongg has brought to my attention a number of cases of dermatitis of the hands and face in which I have suspected that the irritating agent was the Japanese lacquer with which the mah jongg sets are varnished. In the subjoined case this was definitely proved to be the etiologic factor.

### REPORT OF CASE

A man, aged 38, who had been under my care for several years with a mild ichthyosis and at various times had had an eczematoid ringworm of the feet, presented himself, Dec. 24, 1923, with a vesicular dermatitis of the right forearm. The diagnosis I made at this time was a plant dermatitis, as inquiry elicited the fact that he had ferns and other plants in his apartment. Under soothing local applications (calamine lotion) the eruption subsided in a few days. On the morning of December 30, I was called to his apartment and found that he had developed an intense dermatitis of the face and neck. The whole face was edematous, the eyes completely closed, and there was intense redness with vesiculation, giving a clinical picture closely resembling that of *rhus toxicodendron* poisoning (poison ivy). A study of the patient's surroundings, habits and diet revealed nothing significant at this time. He had spent the previous evening at the home of his parents, where a few plants (ferns) were present, and had partaken rather heavily of food. The treatment given at this time was atropin by mouth, catharsis, a restricted diet (non-nitrogenous) and locally wet dressings and lotions. The attack coincided with the advent of a severe cold spell, and this, together with his dry, ichthyotic skin was held accountable for his dermatitis. A blood count and urinalysis were negative. Chemical examination of the blood revealed, for each hundred cubic centimeters, blood calcium, 10 mg. (normal range, from 8 to 11 mg.); blood sugar, 82 mg. (normal range from 80 to 120), and uric acid, 2 mg. (normal range, from 2 to 3). The basal metabolism was 1 per cent. above the average. The patient was kept at home under careful observation. The edema of the face subsided in forty-eight hours, but new vesicles continued to appear on the back of the hands. January 7, there was a recurrence of the dermatitis of the face, together with headache, insomnia and malaise which had attended the previous attacks. Close inquiry elicited the fact that the patient had been doing nothing out of the ordinary for the previous two days except play mah jongg. An examination of the mah jongg set showed that the trays were lined with a sticky, dark brown lacquer, which adhered to the backs of the tiles. Suspecting that this might be the cause of the dermatitis, I scraped off the lacquer and applied it to the unbroken skin of the leg. Within twenty-four hours there was a vesicular dermatitis at the site of the application. Further history confirmed the fact that the dermatitis began two days after the patient had purchased the mah jongg set, and that the severe attack of December 30 had been preceded by a prolonged session on the previous day. After discontinuing the game, the patient made a rapid recovery.

### COMMENT

Japanese lacquer dermatitis is not a new subject and, according to Prosser White, is well known in the Orient. Buracynski mentions a gardener who developed wheals after felling a lacquer tree and after repotting young plants. Other articles on the irritant properties of lacquer have been written by Meyer, Moebius, Rost and Stevens. In this country, Pusey was the first to record a case. His patient developed a papulovesicular dermatitis of the forearms and hands from handling lacquered canes. Cutaneous tests with an alcoholic extract of the varnish produced an inflammatory wheal. Subsequently, Wayson reported a series of cases of acute dermatitis of varying severity in workers in a pineapple cannery in Hawaii, where the cans pass through a hot bath of one part of commercial lacquer and five parts of gasoline.

30 North Michigan Avenue.

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## THE DANISH TREATMENT OF SCABIES

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In 1920, Dr. Svend Lomholt,[1] Copenhagen, described a twenty-four hour method of treatment of scabies. This treatment was first used in Copenhagen, in 1911, by Professor Ehlers, and the ointment was made by Mr. Marcussen, a chemist at the hospital of the city of Copenhagen.

We have been using this treatment at the skin department of the Massachusetts General Hospital.

The directions for the preparation of the ointment are given in the original article. Mr. Godsoe, pharmacist at the Massachusetts General Hospital, has kindly furnished the following rather more detailed directions which he has used in making up our supply:

1. One kilogram of sublimed sulphur is mixed with 2 kg. of 50 per cent. solution of potassium hydroxid (as free from water as can be obtained). Gentle heat is applied until reaction ceases and the solution becomes clear. When the process is complete, one should be sure that the sulphur is in excess to a slight degree.
2. Petrolatum, 225 gm., is mixed with wool fat, 225 gm., without heat.
3. To this mixture is added 375 gm. of the solution of sulphur and potash mentioned above.
4. To 40 gm. of 20 per cent. sodium hydroxid solution is added 28 gm. of zinc sulphate. The mixture is agitated thoroughly until reaction ceases, poured on filter paper, and washed thoroughly; then the washed precipitate is added to the foregoing.
5. Liquid petrolatum is added to obtain a total weight of 1,000 gm.
6. Five grams of oil of bitter almond is added to check the somewhat disagreeable odor of hydrogen sulphid.

The important elements in the ointment are the sulphids of potassium, on which its activity depends, a production of hydrogen sulphid taking place when the ointment is placed on the skin.

The directions for use of the ointment as given in the original article are, briefly, as follows: The patient receives an ordinary cleansing bath, dries himself thoroughly, and afterward rubs the whole of his body, except his head, carefully with the ointment. The ointment must cover all the skin, but hard rubbing is neither required nor desirable. The patient ought then to wait for a quarter of an hour to give the ointment time to get into the skin; after this he can go to bed. The next day, at about the same hour, he receives a bath and fresh underclothing, and the treatment is finished. Meanwhile, all his clothes have been disinfected. We have followed these directions in our cases, in addition, insisting on the disinfection of the bedding.

Dr. Lomholt reported 678 cases treated between April, 1915, and April, 1920, all without a single

1. Lomholt, Svend: Lancet 2: 1251 (Dec. 18) 1920.

relapse. Dermatitis was observed in two patients treated by some ill prepared ointment, which caused an alkaline cauterization of the skin.

At the Massachusetts General Hospital we have used it in eighty-four cases. We have had three failures. In each case the patient did not follow directions. We have had two cases of dermatitis following its use. Both of these patients used the ointment continuously for five days. It is distinctly inadvisable to use it in this way, judging from these cases. We have used it in patients with delicate blond skin, as well as in the pigmented, more resistant types, in children as well as adults, and have had no bad results when it was properly used.

In our experience with scabies we have found it commonly necessary to treat the entire family, and in such cases the three- or five-day treatment is often an almost insurmountable obstacle to a cure because the family will not, or cannot, carry it out thoroughly; and it is in such circumstances that the twenty-four hour method of treatment is of most value. With the three- or five-day treatment we frequently have a continuation of the itching for one or two weeks after the original disease is cured. This is often from a mild or severe sulphur dermatitis which follows the treatment. With the twenty-four hour method we have not encountered such cases.

It is not advisable to use this ointment unless one is certain that it is properly made. It is sold to our outpatients for 25 cents for a 2 ounce box, and 1 ounce is sufficient for a treatment for one person. With the ointment which we have used in the three-day treatment (naphthol, 2 gm.; sublimed sulphur, 4 gm.; balsam of Peru and petrolatum, of each, 16 gm.) the cost is 40 cents for a 2 ounce box. This makes it considerably more expensive than the Danish ointment, and this is a matter for consideration when an entire family is to be treated.

It has been our experience, and we wish to emphasize this fact, that it is necessary to be certain that there are no other cases in the family; and if there are, that all are treated. This is so with any method of treatment. At the Massachusetts General Hospital these cases are followed up by an expert nurse, and it is only since the carrying out of this procedure that our results with any treatment have been good.

We feel also that the treatment of scabies would be still more successful if every case could be treated in the hospital ward. The twenty-four hour method makes this more nearly possible. With a three- or five-day treatment, such hospitalization is obviously impossible with the limited number of beds available for dermatologic cases. The amount of time and care necessary to make this ointment would probably make its cost prohibitive for the treatment of a few scattered cases in private practice, unless arrangements could be made to obtain it from a large clinic where it was in constant use.

421 Marlboro Street.

**Nature of Diabetes.**—While the discovery of insulin completely proves that the cellislets of the pancreas form an internal secretion which promotes the assimilation of sugar, it does not prove that all diabetes is due to a pancreatic lesion. The fact that pituitary extract can antagonize insulin provides new support for the view that diabetes may be due to a more profound and subtle disturbance of metabolism than a lesion of one gland.—W. L. Brown: *Brit. M. J.* **2**:1077 (Dec. 8) 1923.

## *Clinical Notes, Suggestions, and New Instruments*

### CONCURRENT HYDROPERICARDIUM AND PNEUMOTHORAX

HAROLD H. FOX, M.D., MIAMI, FLA.

A review of the literature on pericarditis with effusion, and on pneumothorax, fails to disclose a report of exactly the combination of pathologic conditions reported here. The extreme rarity of this condition and the good results following surgical treatment under local anesthesia warrant the report of the case.

#### REPORT OF CASE

W. P. R., a man, aged 36, married, at the age of 19 first noticed a "slipping, rubbing sensation" in the chest, so severe as to awaken him at night. It was apparently caused by the beating of his heart. He was told by a physician that this condition was caused by the heart, and that one of the heart valves was leaking. Several years later this condition cleared up, and he did not notice it again until his present illness.

July 25, 1922, while dressing, the patient first noticed that his heart was beating on the right side, the point of maximum impulse being about 1½ inches (4 cm.) to the right of the sternal margin. He suffered no physical discomfort, shortness of breath or dyspnea, and continued at his work.

October 15, while at work, he suddenly developed severe chills with pain at the back of the left shoulder. His temperature was 102. There was no cough and no pain other than in the area of the left shoulder. He felt very weak, but without evident cardiac distress. The illness lasted for about a week, and he apparently made a complete recovery. He noticed, however, that after his illness his heart seemed to be still farther to the right of the sternum.

Jan. 3, 1923, I was called to see him. Early in the afternoon while at work, he had been seized with a sudden, severe pain in and posterior to the left shoulder in about the same location as during the attack in October. This pain extended downward on the left side of the thorax to the costal margin. There was an occasional slight, painful, dry cough. The breathing sounds on the left side were diminished, and on the right side increased, in intensity. There was slight hyperresonance on the left and increased vocal fremitus on the right side. The heart sounds were poorly heard. The point of maximum intensity was 2 inches (5 cm.) to the right of the sternal border in the fifth interspace; the pulsations could be felt all over the right lower thorax and the upper abdomen on the right side. The percussion note in this area was from dull to flat. It was impossible to distinguish the line of demarcation between liver dulness and that of the distended and displaced pericardium. The liver dulness extended four finger breadths below the right costal margin. The left cardiac border was about 2 inches to the left of the sternal border. A peculiar gurgling, splashing sound could be heard at times over the area of cardiac dulness.

The patient appeared to be in a state of shock. The temperature was 97.5. Respiration was 30, shallow, jerky, and of the abdominal type. The pulse was 120 and irregular, the systolic blood pressure was 130; diastolic, 70. The patient was given hypodermically, morphin sulphate, one-fourth grain (0.016 gm.), and glyceryl trinitrate, $\frac{1}{150}$ grain, and placed in bed with hot water bags to the extremities. He refused to go to the hospital. When seen again that night his condition was somewhat worse. All the symptoms were exaggerated. The lips were livid, the skin was very dry, and the extremities were cold. There was a peculiar ashy hue over the face and body. The patient complained of great pain in the entire left thorax and particularly in the cardiac area, and along the inner side of the left arm and hand. The left side of the thorax was markedly hyperresonant from base to apex; breathing sounds in this area were absent. He was given hypodermically morphin sulphate one-half grain (0.03 gm.), in combination with atropin sulphate, $\frac{1}{150}$ grain.

January 4, the patient felt much better. The chest findings and general appearance were about the same. A soft systolic

murmur was noted at the point judged to be the apex of the heart, to the right of the sternum. This murmur was not transmitted to the back. For the first time, a distinct friction sound was heard during systole. The aortic and second pulmonic sounds were accentuated. The systolic blood pressure was 115; diastolic, 70; temperature, 98.6; pulse, 110; respiration, 25. There was an occasional dry cough. A roentgen-ray examination revealed a well defined shadow above and to the left of the cardiac shadow, which on succussion showed a well marked fluid wave, and which on changing position showed a changing fluid level. There was a shadow indicating pulmonary collapse of nearly all of the left lung. A diagnosis of pericarditis with effusion, complicated with pneumothorax and collapse of the major portion of the left lung was made. A blood Wassermann test was negative. A urine examination disclosed no abnormalities.

January 6, the patient was admitted to the Riverview Hospital; operation was done, January 7. Under local anesthesia, an L-shaped incision was made along the left sternal border and extending down the seventh rib on the left side for a distance of 2 inches. The skin was retracted, and after blocking the fifth, sixth and seventh intercostal nerves, a section 1 inch long of the sixth costal cartilage was removed, leaving a portion of its periosteum intact. The pericardium was opened, and 38 c.c. of clear fluid was aspirated. A small rubber tissue drain was left in the pericardial opening and the wound closed about it. An aspirating needle was then inserted in the seventh left intercostal space in the midaxillary line and approximately 500 c.c. of air aspirated from the pleural cavity. No fluid was encountered. On removal of the aspirating needle, the puncture wound was immediately sealed. Heavy gauze absorbent dressings were placed over the pericardial drain, and the patient was returned to bed. His general condition was good and he complained of but little discomfort attending the operative measures. The dressing pads were changed twice within the next six hours, in each instance being saturated with pericardial drainage fluid. At the time of the changing of the second dressing the patient complained of severe pain in the cardiac area. The position of the heart had changed so that the point of maximum intensity of the cardiac impulse was again evident at the left border of the sternum, and a rough friction sound could be heard without the aid of the stethoscope. Because of the pain, the drain was removed.

January 8, the patient felt better. There was a slight amount of drainage from the wound and he continued to improve. January 11, he was placed on forced breathing exercises by means of two Woulfe bottles containing fluid and connected by rubber tubing. By blowing the fluid from one bottle to the other the intrapulmonary pressure was raised and the lung forcibly expanded. These exercises were given for five minutes twice daily at first, but as he continued to improve the periods were lengthened and the intervals decreased. Except for a rather obstinate skin infection which developed at the site where the drain had been removed, his recovery was gradual and uneventful. The collapsed lung expanded gradually. The pericardial friction sound decreased in intensity. There was no pain in the cardiac area. Pleural friction sounds were well marked. March 12, the heart was in its normal position. The lung had fully expanded to the limit of the pleural cavity, and no râles could be detected. The patient felt fine. He had gained about 20 pounds (9 kg.) and was back at work. There was no cough, and the resected rib had apparently regenerated.

### COMMENT

The pneumothorax in this case possibly resulted from the penetration of the pulmonary tissue and pleura by a tuberculous ulcer, and the consequent escape of air from an air vesicle or bronchiole into the pleural cavity. The collapse and resultant rest of the lung, incident to the equalization of the intrapulmonary and intrathoracic air pressure, permitted the opening in the visceral pleura to close and heal. Later, with the absorption of air from the pleural cavity and with the increased intrapulmonary pressure induced by forced breathing exercises, the lung once more expanded to its normal capacity. An unrecognized pericarditis with effusion occurring during the nineteenth year probably marked the beginning of the hydropericardium. The fluid accumulated so slowly that it was not until the complication of an accidental pneumothorax that the patient developed any marked cardiac distress.

The very serious nature of such cases and the great need of preventing any further embarrassment of either the respiratory or the circulatory system make the choice of an anesthetic for operative measures one of paramount importance. I have found that local anesthesia, when properly given, is very satisfactory, whether the case is one requiring a simple rib resection or one of extensive lung decortication. The ease with which such cases may be handled and the freedom from distressing after-effects so often associated with ether or chloroform anesthesia make it the method of choice in the majority of surgical operations on the adult thorax.

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## HYPOGLYCEMIC SYMPTOMS PROVOKED BY REPEATED GLUCOSE INGESTION IN A CASE OF RENAL DIABETES *

R. B. GIBSON, PH.D., AND R. N. LARIMER, M.D., IOWA CITY

One of us (R. B. G.), in November last, reviewed the chemical findings in a case from our diabetic clinic before the Iowa Clinical Medical Society. Interest in the case centered in the fact that a final diagnosis of what was otherwise a case of pronounced renal diabetes could not be made because the sugar curve indicated a deficient glycogenesis of the mildly diabetic type. A study of the effects of a repeated ingestion of glucose on the sugar curve by Hamman and Hirschman[1] was recalled, and we predicted in our report that a decisive differentiation might be obtained if we employed the double sugar curve test in this case. The patient was requested to return for further observation, and promised to come to the clinic in January of this year.

We have in the clinic, at the present time, a second patient with a fasting hypoglycemia and a glycosuria of long standing which does not respond to diabetic management. The data presented in this communication were obtained in this case.

Glycogenesis is stimulated by glucose ingestion, as is indicated by the rapid fall of the blood sugar from the peak of the curve (usually forty-five minutes) to a figure at the end of two hours almost always less than the fasting control observation. A second administration of glucose brings about a yet more rapid removal of sugar from the blood stream and a consequent lowering of the sugar curve. The desugarized diabetic patient may show an effect similar to the normal person, but of much less degree (one case, Hamman and Hirschman). When tried in our case, the effect of the double sugar curve test was so great that hypoglycemic symptoms were observed in two out of three trials.

### REPORT OF CASE

Mrs. B., aged 30, white, weight 110 pounds (50 kg.) (best weight 115 pounds [52 kg.] ten years ago) was admitted to the hospital with a history of glycosuria of ten years' standing. This had been discovered by a urine examination during the first of her two pregnancies. She had never had other symptoms of diabetes except for some pruritus seven years ago; she had dieted off and on since that time. The condition seemed to be familial, the patient stating that she had one sister surely and one probably glycosuric patients without other symptoms; however, she had no knowledge of glycosuria in either of her parents.

The patient was placed on a diet of 50 gm. of protein, 50 gm. of carbohydrate, and 125 gm. of fat; on this, she excreted from 4.5 to 8.5 gm. of glucose daily. Her blood uric acid was 3 mg., and blood urea nitrogen, 18 mg. Fasting blood sugar determinations or figures obtained two hours after meals were always hypoglycemic. The results of our tests with the double sugar curve are given in the accompanying table.

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* From the Chemical Research Laboratory of the Department of Theory and Practice of Medicine and Clinical Medicine, the State University of Iowa.

1. Hamman, L., and Hirschman, I. I.: Studies on Blood Sugar, IV, Effects upon the Blood Sugar of Repeated Ingestion of Glucose, Bull. Johns Hopkins Hosp. 30: 306 (Oct.) 1919.

Definite hypoglycemic symptoms were obtained in the first and third trials; they were identical with the several mild insulin reactions which we have observed in our diabetic patients, consisting of burning and flushing of the face, weakness, tremor and sweating. The second shock was the more severe of the two; the patient was completely relieved in fifteen minutes when given 100 c.c. of orange juice. The lowering of the level of the entire curve in the third trial is in accord with the experience that glycogenic effects may become more pronounced if the ordinary procedure is repeated without a sufficient number of days elapsing between tests.

When questioned as to the occurrence of similar attacks at home, the patient stated that she had experienced such of milder degree, but could not associate these with any definite circumstance. One sister had like attacks. It seems likely that hypoglycemic symptoms not artificially produced are a definite clinical entity.

*Double Sugar Curve Tests*

| Time | Blood Sugar | Urine Volume | Urine Sugar, Gm. |
|---|---|---|---|
| December 15 | | | |
| 8:00 | 0.070 | 200 | 0.00 |
| 8:30 | 50 gm. glucose | | |
| 9:30 | 0.190 | 400 | 8.12 |
| 10:10 | 0.174 | | |
| 10:45 | 0.074 | Lost | |
| 11:30 | 0.069 50 gm. glucose | | |
| 11:45 | ..... | 400 | 8.05 |
| 12:15 | 0.140 | | |
| 12:45 | ..... | 265 | 3.58 |
| 1:15 | 0.113 | | |
| 1:45 | ..... | 280 | 5.33 |
| 2:15 | 0.062 | | |
| 2:45 | ..... | 145 | 1.03 |
| 3:30 | Begining mild hypoglycemic reaction | | |
| 4:00 | ..... | 100 | 0.20 |
| 7:00 | ..... | 610 | 1.52 |
| December 16 | | | |
| 9:00 | 0.091 | 185 | Trace |
| 9:05 | 50 gm. glucose | | |
| 9:30 | 0.143 | 145 | 2.13 |
| 10:30 | 0.212 | 255 | 4.71 |
| 11:30 | 0.143 | 290 | 4.58 |
| 11:45 | 50 gm. glucose | | |
| 12:15 | 0.138 | 114 | 4.22 |
| 1:15 | 0.129 | 240 | 8.28 |
| 2:15 | 0.097 | 140 | 3.59 |
| 3:15 | 0.075 | 10 | 0.11 |
| 4:15 | 0.079 | 300 | 2.02 |
| December 20 | | | |
| 8:00 | ..... | 235* | 0.23 |
| 8:20 | 0.058 | | |
| 8:30 | 50 gm. glucose | | |
| 9:00 | 0.097 | 585 | 0.58 |
| 9:30 | 0.118 | | |
| 10:00 | 0.132 | 590 | 3.30 |
| 11:00 | 0.076 | 555 | 2.80 |
| 11:30 | 0.040 | 485 | 1.50 |
| 11:30 | 50 gm. glucose | | |
| 12:00 | 0.108 | | |
| 12:30 | ..... | 580 | 2.09 |
| 1:00 | 0.122 | | |
| 1:30 | ..... | 495 | 3.66 |
| 2:00 | 0.079 | | |
| 2:30 | ..... | 180 | 1.44 |
| 3:00 | 0.058 | | |
| 3:15 | Beginning hypoglycemic reaction of moderate severity | | |

* Fluids forced during test in another connection.

In explanation of a diminished glycogenesis in pronounced renal diabetes, it was stated, in the paper referred to above, that "It is quite possible that glycogenesis in our case may be functionally diminished because of the rapid removal of glucose through the kidneys; if so, repeated administration of glucose might so stimulate the glycogenic power that a normal or subnormal sugar curve will result."

Since this report was submitted for publication, threshold hypoglycemic symptoms with a blood sugar of 0.045 per cent. have been induced in our first patient; the maximum hypoglycemic effect is quite transient.

**Team Work.**—In the medical profession the value of team work has been recognized from the earliest times. When an engineer finds out a new process he patents it, so that none but him may use it. When a doctor makes a discovery it is the tradition of his profession that he should publish it to the world, so that all his colleagues and their patients may benefit thereby.—S. Hastings: *Lancet* **2**:776 (Oct. 6) 1923.

# New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

**FLUMERIN-H. W. & D.**—Disodium-2-hydroxymercuri-fluorescein, $NaOOC.C_6H_4.C(C_6H_2.HgOH.ONa.C_6H_3O)_2$. The disodium salt of 2-hydroxymercurifluorescein.

*Actions and Uses.*—Flumerin-H. W. D., when injected intravenously, is tolerated by rabbits in doses containing from eight to twenty times the amount of mercury present in the therapeutic dose of other mercurial drugs commonly used. When injected into rabbits with syphilitic lesions, the drug brings about resolution of the lesions without apparent injury to the kidney.

According to the report of White, Hill, Moore and Young (Jour. A. M. A., Sept. 9, 1922, p. 879), flumerin injected intravenously in man in doses of 3 mg. per Kg. causes the disappearance of spirochetes from primary and secondary syphilitic lesions. According to these authors, flumerin will bring about resolution of the lesions and in about one-half the cases it will change a positive blood Wassermann reaction to negative. In tertiary syphilitic lesions, resolution of the lesions and disappearance of a positive Wassermann reaction was brought about in a majority of the cases treated by White, Hill, Moore and Young. Judging from urinary examination no permanent renal damage was done by the injection of the drug.

*Dosage.*—From 2 to 5 mg. per Kg. of body weight injected intravenously in 2 per cent. aqueous solution. Flumerin-H. W. & D. is incompatible with acids, halides and the salts of many alkaloids. Therefore water and not physiologic solution of sodium chloride is used to prepare solutions. If solutions be made with sterile water they may be used during three days if kept in well stoppered bottles in the dark.

Manufactured by Hynson, Westcott & Dunning, Baltimore. No U. S. patent or trademark.

*Flumerin-H. W. & D. Tubes, 0.15 Gm.*
*Flumerin-H. W. & D. Tubes, 0.20 Gm.*
*Flumerin-H. W. & D. Tubes, 0.25 Gm.*
*Flumerin-H. W. & D. Tubes, 0.30 Gm.*

Flumerin-H. W. & D. is a red, odorless powder; somewhat hygroscopic. It is soluble in hot water (about 1: 10); insoluble in alcohol, chloroform or ether. On incineration flumerin-H. W. & D. yields an ash containing sodium carbonate. Aqueous solutions of flumerin-H. W. & D. are deep orange-red in strong concentrations, but show a greenish-red fluorescence in very dilute solutions, the fluorescence being less intense than that of fluorescein in the same concentration. Aqueous solutions of flumerin-H. W. & D. are decomposed by acids, chlorides, bromides, iodides and the salts of many alkaloids, and local anesthetics.

Dissolve 1 Gm. of flumerin-H. W. & D. in 50 Cc. of water; no precipitate is produced when separate portions of this solution are treated with sodium hydroxide solution, potassium iodide solution and solution of blood serum. No precipitate is produced when a portion of the 2 per cent. aqueous solution is treated with freshly prepared ammonium sulphide solution (*absence of ionic mercury*), but on standing or on boiling, a suspension or precipitate of mercuric sulphide is produced. To a 2 per cent. solution of flumerin-H. W. & D. add one-half its volume of hydrochloric acid; a precipitate forms. Boil the mixture for one minute, cool, dilute, filter and add ammonium sulphide solution to the filtrate; mercuric sulphide is formed. Add 1 Cc. of a 1: 1,000 solution of flumerin-H. W. & D. to 1,000 Cc. of water; the solution shows a greenish-yellow fluorescence and the color is yellow by transmitted light. Add 1 Cc. of iodine solution and stir. An eosin-like color develops immediately and the solution is pink by transmitted light (*identification of the fluorescein nucleus*).

Determine the chloride content of flumerin-H. W. & D. by ignition with lime and precipitation of the chloride as silver chloride in the usual way. Not more than 0.2 per cent. of chlorine is found. (*Absence of excessive amounts of salts of chloromercurifluorescein.*)

Dissolve about 1 Gm. of flumerin-H. W. & D., accurately weighed, in about 50 Cc. of water at 50-60 C., filter through a weighed Gooch crucible, wash the residue thoroughly until the washings have only a slight color, dry at 110 C. and weigh. No weighable residue is found. Place about 0.2 Gm. of finely powdered flumerin-H. W. & D., accurately weighed, in an 800 Cc. Kjeldahl flask and slowly add 10 Cc. of sulphuric acid, in such a way as to wash down any adherent particles. Mix the materials carefully, heat to a temperature of from 60 to 75 C., remove the flame and add, little by little, finely powdered potassium permanganate, mixing thoroughly after each addition, until the presence of a considerable excess of brown manganese compounds is noted. The appearance of a slight flame after the addition of each portion of the oxidizing agent is immaterial. Cool the mixture to room temperature, add 100 Cc. of water, then gradually add powdered oxalic acid with shaking until the solution becomes clear. Filter if necessary, make the volume to about 200 Cc. with water, pass in hydrogen sulphide, collect the precipitate in a Gooch crucible, wash it successively with water containing hydrogen sulphide, alcohol, ether, carbon disulphide and ether, dry at 100 C. and weigh. The weight of mercuric sulphide corresponds to not less than 30 per cent. of mercury.

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SATURDAY, FEBRUARY 9, 1924

## HEREDITY AND OBESITY

If a hundred men of about the same stature are compared, Davenport [1] remarks in an unusually elaborate study of body build and its inheritance, it is seen that they vary greatly in weight. At the same time they vary in form, and especially in bulk. This variation is popularly recognized by the variety of terms applied to build. The slim, gaunt and lanky, the obese, chubby and portly—these and many more designations have been adopted to describe persons of unlike "build." The extremes of such structural make-up of man not infrequently come to the physician for consideration in his professional capacity. He is expected to transform the slender and the corpulent, as the case may be, into a more nearly average type of body build; to eliminate the supposed disadvantages of undersize and the alleged dangers of overweight by the promotion of more nearly ideal form and weight.

Were the features just stressed merely the expression of an inappropriate adjustment between intake and output of matter, it would seem that the correction of objectionable build ought to become a comparatively easy task. Gain or loss would call primarily for more or less favorable nutritive balances regulated by dietary control. There are many, indeed, who look on obesity as essentially the expression of undue food intake. Others regard the condition as one involving in some way a disordered metabolism. It has even been suggested that the obese digest and utilize their food more efficiently than persons belonging to the nonfattening group, thereby putting on weight under dietary conditions that fail to promote gains in most persons. Those who reject any peculiarity of metabolism in the fattening process point to certain habits of life as favoring obesity. Thus, to quote a recent writer, Eskimos are assumed to grow fat because they eat blubber and huddle in narrow spaces, undergoing little movement throughout the long, dark winters.

It is doubtless true that the ability of the body to store proteins and carbohydrates is limited so that any considerable and long continued excess of food leads to an accumulation of fat. Obesity arises only when the intake of energy in the food has exceeded the expenditure. There is no extensive experimental justification for assuming that the basal metabolism or fundamental energy overturn of obese persons is lower than the lowest normal limits. Nevertheless, it is not easy to avoid the conclusion from every-day observation that certain persons grow fat despite the fact that they appear to eat moderately and appear to take an ordinary amount of exercise. Whatever the fundamental cause may be, says Davenport, the fact remains that in certain families there is a widespread inclination to the production of slender individuals, while in other fraternities certain proportions (though usually not all of any fraternity) are fleshy or even obese. Perhaps, as in the case of the Jersey as contrasted with the beef steer, the two kinds of individuals do not metabolize their food in the same way; some are spare and muscular, others lay on fat. In any case, we cannot disregard the constitutional factors in build.

From his investigations of heredity as expressed in family studies of body build, Davenport can see that no other theory than that constitutional differences as well as nutritional differences determine build is sufficient to meet all the facts. From the standpoint of the geneticist's evidence, variations in build are to be accounted for not merely by variations in intake and outgo of calories, but also by the endogenous factors that determine the "economy of nutrition" or the cost in energy of adding an additional kilogram of weight to the body. The factors involved in producing differences in these respects are hereditary factors. The hereditary factors probably work through the participation of special organs that influence metabolism, notably the endocrine glands. The latter thus intermediate between the chromosomal constitution, on the one hand, and control of metabolic processes, on the other. One naturally thinks of the influences associated with the thyroids and the pituitary glands. That other constitutional conditions than those of the larger endocrine glands may play an important part in metabolism, says Davenport, cannot be denied; probably the quality of the protoplasm of every active cell influences the bodily metabolism; but the endocrine glands proper seem, as it were, to be told off for this specific purpose, and thus peculiarities in their functioning lead to striking results.

From the statistics collected by the Eugenics Record Office of the Carnegie Institution of Washington, it appears that the diseases associated with very slender and slender build are tuberculosis, pneumonia, "nervousness" and melancholia. The diseases associated with very fleshy or fleshy build are diabetes, nephritis and dropsy, apoplexy and arteriosclerosis and paralysis accompanying it; also numerous diseases of the alimentary tract. Incidentally, it appears that fleshy parents

1. Davenport, C. B.: Body-Build and Its Inheritance, Publication 329, Carnegie Institution of Washington, December, 1923.

have, on the average, in their data, larger families than slender parents. Genetically, build seems to be controlled by multiple factors, with fleshiness tending slightly to dominate over slenderness. There is a marked tendency for persons of similar build (or with potentialities for such) to intermarry. Dissimilar builds are selected against.

## SENSITIZATION TO REBREATHED AIR

Since the atmosphere is in some respects foremost among the environmental factors with which man is concerned, it is not surprising that much attention has been directed to its composition and possible influence on human well-being. There is no doubt that under certain conditions the air which we breathe may become vitiated; but the charge of certain types of bodily malaise to "bad air" has often been made more easily than it could be substantiated. Malaria affords a specific illustration of the failure of tradition to sustain the alleged air-borne causation of the disease in harmony with the literal significance of its name. With the development of sanitary science, many of the reputed dangers of air supposedly contaminated in various ways have been dispelled, or have been unmistakably transferred to something other than the products of respiration.

The idea that air in overcrowded, unventilated quarters may harbor dangerous components has long been entertained. We recognize that under such conditions objectionable odors may arise; but no one today can defend the conclusion that bad smells are in themselves directly noxious. An insult to the olfactory organs is likely to remain without further detriment, although it has been difficult to make the uncritical person believe that the odor of garbage or some similar unacceptable smell is not a direct conveyor of materies morbi or the noxae of infection. Again, the supposed danger from carbon dioxid, which accumulates somewhat in crowded quarters where the air is "highly vitiated" by respiration, has been unduly magnified. The changes in the content of oxygen and carbon dioxid that occur in crowded rooms are not such as to produce ill health. Analyses have shown that the oxygen in the worst ventilated schoolroom or public meeting place is never lessened by more than 1 per cent., and rarely so much. Natural ventilation is kept up by the increase of temperature and moisture within, which lighten the air, and by the wind outside. This, taking place through every chink and cranny, chimney opening, porous brick wall and plaster ceiling, prevents a greater alteration. The conclusion of almost all recent observers has been that the "badness" in air is not due to changes in its chemical components by addition or subtraction, but is associated with physical factors. The human sensations of discomfort coincident with confinement in close air are the outcome of combined excessive heat and humidity of the air. As a recent writer has said, it is easy to believe that the morbid cutaneous sensations so produced are a natural danger signal of a harmful disturbance of the heat-regulating function of the skin, which would tend to pervert normal body metabolism.

Each great advance in our knowledge of the causes of disease seems to lead to new complications in connection with the problems of ventilation and the "purity" of the air we breathe. Bacteriology introduced a previously unsuspected etiologic factor; and the science of immunology promises to raise further questions. To appreciate their bearings, one must recall some of the "ancient history" of the subject. Thirty-five years ago there arose a widespread belief in the presence of organic poisons in the expired air, based on experiments of Brown-Séquard and d'Arsonval.[1] Hill[2] has pointed out that their statements have done great mischief to the cause of hygiene, for they have led ventilating engineers to seek after chemical purity and to neglect securing adequate cooling and evaporative power of the air. These authors asserted that the water condensed from the breath and injected into animals acted as a poison. Some of their results, and those of one or two others who have brought forward confirmatory experiments, may be attributed to bacterial infection, some to the toxic effect that is known to follow the injection of water containing bacteria, and some to the large loses of water that were injected at room temperature.

Widely quoted reinvestigation of the points at issue by Billings, Mitchell and Bergey[3] in Philadelphia seemed to bring the last word in connection with the debate. They found that in ordinary quiet breathing no bacteria, epithelial scales or particles of tissue are exhaled. The minute quantity of ammonia or other oxidizable matter in the condensed water of the human breath appears to be due to the decomposition of organic matter in the mouth; it is greater four hours than it is half an hour after eating, and far less if the mouth is cleansed. In the condensation water from a hospital ward, the traces of ammonia are connected with the presence of dust or bacteria, which can be filtered off. The bacteria were regarded as the only really dangerous elements in the air. The condensed moisture of the human breath collected in sterilized apparatus, and warmed to body temperature, had no toxic effect when injected into animals.

Sewall and Gutstein[4] of Denver have pointed out that, when the science of ventilation is investigated through the reactions of immunology, wholly new conceptions arise pertaining to the significance of rebreathed air. If exhalations from the body can be shown to contain an antigen capable of sensitizing an

1. Brown-Séquard and d'Arsonval: Compt. rend. Soc. de biol. **4**: 814, 1887; **5**: 33, 54, 94, 108, 121, 1888.
2. Hill, L.: The Science of Ventilation and Open Air Treatment, Part II, Special Report Series 52, Medical Research Council, London, 1920.
3. Billings, J. W.; Mitchell, S. W., and Bergey, D. H.: Smithsonian Contributions to Knowledge, 989, 1895; 29, 1903.
4. Sewall, H., and Gutstein, H.: On the Experimental Sensitization of Guinea-Pigs to Rebreathed Air, Am. J. Hyg. **3**: 300 (May) 1923.

animal, there is no obvious limit to the influence of such a substance on the vital equilibrium, and especially as an agent modifying resistance to disease. Sewall and Gutstein have found that guinea-pigs exposed to the rebreathed air, including cutaneous dust, given off from other guinea-pigs manifest, in the majority of cases, when reexposed to the same conditions after the lapse of from twenty to eighty days, in comparison with normal control animals, an exacerbation in respiratory disturbance which suggests anaphylactic reaction. It appears, therefore, that these results demand a reopening of the problem of ventilation from the point of view of immunology; for, as Sewall and Gutstein remind us, manifestly the science of ventilation and far-reaching conceptions of hygiene hang on the identification of the morbific elements of exhaled air.

## SOME GASTRIC PROBLEMS IN INFANCY

The practical problems in medicine related to gastric motility, gastric secretion and the composition of the gastric juice have undergone extensive revision and restatement in recent years. This has been due in considerable degree to the introduction of new methods of study and diagnosis, with a consequent augmentation of our knowledge of the subject. The employment of an improved stomach tube permitting the fractional examination of gastric contents is illustrative of changes in technic. The revised interpretation of the reaction of body fluids in terms of hydrogen-ion concentration, and the modern consideration of "buffer" systems that may take up large quantities of acids or bases without materially modifying the reaction of the medium, have altered the chemical features of the digestive processes. The roentgen-ray examination has revealed new aspects of the motility and position of internal organs. The duodenal sound has permitted unanticipated penetration beyond the pylorus for the introduction of foods and drugs or the withdrawal of contents.

Recently, several pediatricians have pointed out certain formerly unappreciated gastric factors in infancy that have been brought into prominence by the newer methods of research. Thus, it has been established that during the first year the average normal infant exhibits, at the height of digestion, a range of gastric acidity that lies between $p_H$ 3.5 and $p_H$ 5.0. It is within this range that the possibility of proteolytic action of the gastric enzymes begins. Modern artificial feeding of infants has greatly modified the mixtures and mediums in which the digestion of the young would proceed under more natural conditions. Many of the current practices are based quite as much on the results of empiric procedures as on scientifically planned observations. Faber [1] of San Francisco, in discussing infant feeding before the May meeting of the American Pediatric Society, pointed out that the stomach cannot perform its task in the digestive process without producing enough hydrochloric acid to raise the level of acidity to a point at which the various enzymes will be activated. While this point varies for the different enzymes, we may for practical purposes assume a threshold of about $p_H$ 5.0 as that which the gastric acidity must reach before any of them, excepting rennet, becomes usefully active. Faber and others [2] have recently called attention to the further fact that the kind of food used determines the amount of acid necessary for digestion. Skimmed cow's milk has a higher buffer value than breast milk; therefore, it requires a greater amount of acid to bring it to a given acidity. Increasing the amount of food or increasing the concentration increases the total buffer substance, and therefore increases the acid requirement. The more acid the food is initially, the less acid is required to bring the gastric contents to a given $p_H$.

According to Faber, to 100 c.c. of human milk, the equivalent of from 15 to 20 c.c. of tenth normal acid must be added before the threshold acidity of $p_H$ 5.0 is reached, while, to the same quantity of cow's milk, from 50 to 60 c.c. must be added. Consequently, he has advocated the reduction of the buffer effect of cow's milk for infant feeding by addition of acid rather than by dilution. Specifically, it is stated that after the addition of one-fourth volume of tenth normal hydrochloric acid to cow's milk, the taste and appearance are not appreciably altered. Its buffer value then resembles that of human milk; and the new product is said to have the advantages, over bacterially soured milk, of convenience in preparation and ease of the graduated return to unsoured milk.

It is too early to foretell whether the proposal to "modify" milk by the addition of measured amounts of acid will bring the larger practical advantages that are anticipated for it. Perhaps it will find application, as soured milks and protein milk have, in certain types of cases of lowered digestive powers in infancy. It should not be used in very early life, and it must not be regarded as a necessity in all cases or in any sense as a panacea. Its limitations, as well as its indications, remain to be more clearly formulated. Shohl and his collaborators [2] have pointed out that, in infants, acid production and hydrogen-ion concentration increase with increase of age. They have observed that the secreting capacity of infants is limited, so that when larger amounts of food or more concentrated foods are given, they are no longer able to reach the optimal acidity. The amount usually secreted can only be doubled. There is a very small factor of safety. This, in itself, affords a rational basis for supplying some sort of acid to certain infants, although it must be remembered that the greater the gastric acidity, the more rapidly the

1. Faber, H. K.: Hydrochloric Acid Milk in Infant Feeding, Am. J. Dis. Child. **26**: 401 (Nov.) 1923.

2. Babbott, F. L., Jr.; Johnston, J. A.; Haskins, C. H., and Shohl, A. T.: Hydrogen-Ion Concentration of Gastric Contents of Infants, Am. J. Dis. Child. **26**: 475 (Nov.) 1923.

stomach empties; and too rapid delivery of acid contents into the duodenum may not always be desirable. It is not the details of possibilities and limitations, of indications and contraindications for acid administration that deserve emphasis at this time. Perhaps Carlson [3] is fully justified in his contention that the rôle of the gastric juice in the maintenance of health and in the etiology of disease has been exaggerated, to the neglect of the importance of normal gastric motility. Our foremost purpose in presenting the newer studies has been to emphasize the way in which new points of view and methods of approach are being exemplified in an important field of pediatric concern.

## Current Comment

### THE INSULIN RESERVE

It will be interesting to note a few years hence the extent to which insulin has extended the life span of diabetic patients. It appears that there is a type of diabetes that progresses to a total loss of tolerance and in which insulin does not materially affect the underlying metabolic fault. It is highly probable, according to Wilder,[4] that patients with the acute type of diabetes will in a few years lose all native tolerance for glucose, and become completely dependent on insulin. Their metabolism will consist exclusively of ketogenic acids, and 100 or more grams of acetoacetic acid will accumulate daily. How much insulin will keep these patients alive? Assuming that a normal man resting generates 1,700 calories a day, that amount of heat in completely diabetic patients would be supplied by ketogenic acids, which, in terms of fat, would be 180 gm. To avoid acidosis in these hypothetic patients, 56 gm. of oxidizing glucose would be required, and, to metabolize the glucose, 37 units [5] of insulin would have to be injected. But infection and other complications may suddenly arise. It seems, therefore, that at least 1 unit of insulin for every necessary gram of glucose, or 56 units a day, might be required, and still more would be necessary if the patient is to lead an active life. Wilder therefore finds it desirable, in planning satisfactory diets that are palatable, to establish tolerance for 100 gm. of glucose, which might necessitate 100 units of insulin. Infection always demands more insulin. It cannot be too strongly emphasized that a partially diabetic patient may suddenly be converted into a totally diabetic patient by infection. The best insurance in such emergencies is to keep on hand a month's reserve supply of insulin. Distributors of insulin (and the postman is included) are responsible in part for the welfare of such patients, and in times of epidemics of the infectious diseases, that responsibility will increase. The economic aspects of the use of insulin are also concerned in the discussion by Drs. Reginald Fitz and William P. Murphy [6] in this issue of THE JOURNAL. As they wisely indicate, there are two classes of diabetic patients: those to whom insulin is a luxury and those to whom it is a necessity. To those diabetic patients who have a high tolerance and who do well for years on a reasonably restricted diet, insulin offers little as an economic investment. One cannot help but agree with the conclusion that the wise physician will conserve the use of insulin in the cases of such diabetic patients as can dispense with it or use only small amounts, and will hold it in reserve as an indispensable product for the patients who require large amounts in order to secure definite results.

### THE ABSORPTION OF EPINEPHRIN

Despite its extraordinary pharmacodynamic potency, notably as expressed in an action on the nerve endings of the sympathetic system, epinephrin is regarded as a drug that offers difficulty of administration. This has doubtless often limited its therapeutic employment. Although epinephrin is absorbed from the mucous membranes of the nose, throat, mouth, urethra, vagina and rectum, the effectiveness of such modes of introduction is too uncertain to make them popular. According to the Pharmacology of Useful Drugs,[7] "epinephrin is one of the few alkaloids in the materia medica which are not absorbed from the gastrointestinal canal with such rapidity as to induce any appreciable effect." The intravenous route, through which the drug exerts its profound effects with immediate potency, must be employed with extreme caution and therapeutic skill to prevent untoward results, involving the heart, from overbalancing the more favorable desired reactions in which the blood vessels or other muscular organs are concerned. Furthermore, the manifestations secured are likely to be rather evanescent. Epinephrin disappears rapidly from the circulation and the tissues, and apparently undergoes rapid destruction, so that after a short period it can no longer be discovered in the blood. The foregoing circumstances have therefore fostered other attempts of administration, notably by subcutaneous or by intramuscular injection. The response to the latter is considerable, though it is slower and lasts longer than that brought about by intravenous administration. There is a widespread belief that epinephrin, given subcutaneously, causes little general effect, and that the action is decidedly uncertain. It is assumed that the intense constriction of the blood vessels in the immediate region of the injection retards absorption. Such vasoconstriction seems to be confirmed by the well known blanching about the site of injection. Lyon,[8] however, of the Department of Therapeutics at the University of Edinburgh, has reminded us that the spectacular relief from distressing symptoms that occur in asthmatic patients within a few minutes after a hypodermic injection of a minute dose of epinephrin has been given is in

3 Carlson, A J: The Secretion of Gastric Juice in Health and Disease, Physiol Rev. 3: 1 (Jan.) 1923.

4. Wilder, R. M.: The Treatment of the Emergencies of Diabetes, Minnesota Med. 7: 12 (Jan.) 1924.

5. The references to insulin dosage are based on the original unit of insulin-Lilly.

6. Fitz, Reginald; and Murphy, W. P.: Insulin as an Investment for the Patient with Diabetes Mellitus, this issue, p. 435.

7. Hatcher, R. A., and Wilbert, M. I.: Pharmacology of Useful Drugs, Chicago, American Medical Association, 1915, p. 189.

8. Lyon, D. M.: The Absorption of Adrenalin, J. Exper. Med. 38: 655 (Dec.) 1923.

itself evidence that absorption by this route is rapid and satisfactory. He assumes, therefore, that it proceeds locally by lymphatic rather than by blood vascular channels. Lyon points out that, from the blanched zone produced by epinephrin in the neighborhood of a hypodermic needle puncture in many cases, irregular, white lines can be traced for some distance centrally from this area. These lines, he states, do not correspond to blood vessels, but resemble in distribution the red streaks of inflamed lymphatics that appear in cases of cellulitis. The speed of absorption from the subcutaneous tissues is evidently influenced by the circulation rate, so that exaggerated reactions may follow in cases of exophthalmic goiter without raising the question of any hypersensitiveness of the tissues to the drug, as is often asserted. The implication of the lymph channels in the subcutaneous absorption of epinephrin presents new possibilities for therapeutic consideration.

# *Association News*

## THE CHICAGO SESSION

### Local Committee of Arrangements

The Local Committee of Arrangements for the Seventy-Fifth Annual Session of the American Medical Association, to be held in Chicago, June 9-13, 1924, consists of: chairman, J. W. Van Derslice; treasurer, John S. Nagel; secretary, Hugh N. MacKechnie, and Isaac A. Abt, Archibald Church, D. J. Davis, Ludvig Hektoen, C. E. Humiston, Frank Morton and J. H. Walsh. Mrs. Charles Spencer Williamson will serve as chairman of the Ladies' Entertainment Committee. The office of the Local Committee of Arrangements is located in Room 1522, Marshall Field Annex, 25 East Washington Street, Chicago. This committee is ready to extend any assistance within its power to physicians who expect to attend the Chicago Session. The committee has held a number of meetings, and great progress has been made in arranging the important details of the session. The committee may be addressed as indicated above by any who desire information.

### Chicago Hotels

The Local Committee of Arrangements, through the chairman of its Committee on Hotels, Dr. Frank Morton, presents the following preliminary list of Chicago's leading hotels. In this list the hotels are arranged according to location. The central group is the one in which the hotels are located in or near the business center of the city; the northern group, on the north side of the city, and the southern group, on the south side. The number of rooms available for accommodation of members and Fellows of the American Medical Association is given, together with minimum rates. The Committee on Hotels of the Local Committee of Arrangements is receiving the active, helpful cooperation of the Hotel Men's Association and the Chicago Chamber of Commerce.

Requests for hotel reservations should be made direct to the management of the preferred hotel, and the kind of accommodations desired should be stated clearly. Applicants for reservations should be careful to indicate whether a room with or a room without bath is desired, what rate is wanted, and as nearly as possible the exact time of arrival in Chicago. The Committee on Hotels has arranged with the Hotel Men's Association that, in cases in which the preferred hotel cannot take care of the applicants for rooms, the applications shall be sent to the Committee on Hotels, which will endeavor to make other reservations in desirable hotels. For this reason, a second and third choice of hotels should be given in every communication seeking accommodations. The committee is assured that there will be suitable accommodations for all who will attend the session. Those who find it necessary to communicate with the Committee on Hotels of the Local Committee of Arrangements may address their communications to Room 1522, Marshall Field Annex, 25 East Washington Street, Chicago.

| Hotel and Address | Rates: Without Bath, Single | Without Bath, Double | With Bath, Single | With Bath, Double |
|---|---|---|---|---|
| **CENTRAL GROUP** | | | | |
| Atlantic—200 rooms..... Clark St. near Jackson Blvd. | $2.00 up | $3.00 up | $3.00 up | $4.00 up |
| Auditorium—200 rooms..... Michigan Blvd. & Congress St. | 3.00 up | 4.00 up | 4.50 up | 6.00 up |
| Blackstone—300 rooms..... Michigan Blvd. & Seventh St. | 4.00 up | 5.00 up | 5.00 up | 6.00 up |
| Brevoort—100 rooms..... 120 W. Madison St. | 2.50 up | 4.00 up | 3.50 up | 4.50 up |
| Briggs—50 rooms..... Randolph & Wells St. | ..... | ..... | 2.50 up | 4.00 up |
| Congress—200 rooms..... Michigan Blvd. & Congress St. | 3.00 up | 5.00 up | 5.00 up | 7.00 up |
| Drake—200 rooms..... Michigan Blvd. & Lake Shore Drive | ..... | ..... | 4.00 up | 6.00 up |
| Fort Dearborn—200 rooms..... La Salle & Van Buren Sts. | 2.50 up | 3.50 up | 3.00 up | 4.00 up |
| Grant—50 rooms..... Dearborn & Madison Sts. | 1.50 up | 3.00 up | 2.00 up | 4.00 up |
| Great Northern—200 rooms..... Jackson, Dearborn & Quincy Sts. | 2.50 up | 4.00 up | 3.50 up | 6.00 up |
| La Salle—600 rooms..... Madison & La Salle Sts. | 2.50 up | 4.00 up | 4.00 up | 6.00 up |
| Lexington—200 rooms..... Michigan Blvd. & 22d St. | 2.00 up | 3.00 up | 3.00 up | 4.00 up |
| Lorraine—25 rooms..... 417 S. Wabash Ave. | ..... | ..... | 2.50 up | 3.50 up |
| Majestic—40 rooms..... Quincy, bet. State & Dearborn Sts. | 2.00 up | 3.50 up | 2.50 up | 5.00 up |
| Metropole—75 rooms..... Michigan Blvd. & 23d St. | 2.00 up | 3.00 up | 3.00 up | 4.00 up |
| Morrison—400 rooms..... Clark & Madison Sts. | 3.00 up | 5.00 up | 4.00 up | 6.00 up |
| New Southern—100 rooms..... Michigan Blvd. & 13th St. | 2.00 up | 3.50 up | [illegible] up | 5.00 up |
| Pearson—100 rooms..... 190 E. Pearson St. | ..... | ..... | 6.00 up | 7.00 up |
| Planters—75 rooms..... Clark & Madison Sts. | 2.50 up | 3.50 up | 3.00 up | 4.00 up |
| Plaza—25 rooms..... North Ave. & Clark St. | ..... | ..... | 2.50 up | 3.50 up |
| Sherman—700 rooms..... Clark & Randolph Sts. | 3.50 up | ..... | 4.00 up | 6.00 up |
| Virginia—50 rooms..... Rush & Ohio Sts. | ..... | ..... | 3.00 up | 4.00 up |
| **NORTHERN GROUP** | | | | |
| Ambassador—100 rooms..... State & Goethe Sts. | ..... | ..... | ..... | 3.50 up |
| Belmont—350 rooms..... 3100 Sheridan Road | ..... | ..... | 5.00 up | 6.00-8.00 |
| Edgewater Beach—600-800 rooms..... 5300 Block Sheridan Road | ..... | ..... | 4.00 up | 7.00 up |
| Lott Hotels—400 rooms..... Belden—2300 Lincoln Park West Parkway—Lincoln Park West at Garfield Webster—Lincoln Park West at Webster | ..... | ..... | 4.00 | 5.00 |
| Melbourne—50 rooms..... 4625 N. Racine Ave. | ..... | ..... | 2.00 up | 4.00 up |
| Montezuma Lodge—10 rooms..... 908 Windsor Ave. | 2.50 up | 3.50 up | 3.50 up | 4.50 up |
| Plymouth—75 rooms..... 4700 Broadway | 2.00 up | 3.00 up | 3.00 up | 5.00 up |
| Sheridan Broadway—300 rooms..... Sheridan Road at Broadway | ..... | ..... | ..... | 3.00 up |
| Sheridan Plaza—150 rooms..... Sheridan Road at Wilson Ave. | ..... | ..... | 3.00 up | 4.50 up |
| Somerset—75-100 rooms..... Sheridan Road at Argyle | ..... | ..... | 5.00 up | 6.00 up |
| Sovereign—150 rooms..... Kenmore at Granville | ..... | ..... | ..... | 4.00 up |
| Surf—100 rooms..... Surf at Pine Grove Ave. | ..... | ..... | 4.00 up | 7.00 up |
| **SOUTHERN GROUP** | | | | |
| Chicago Beach—250 rooms..... Hyde Park Blvd. at 51st St. | 3.00 up | 4.00 up | 4.00 up | 5.00 up |
| Cooper-Carlton—100 rooms..... Hyde Park Blvd. at 58d St. | ..... | ..... | 4.00 up | 5.00 up |
| Del Prado—125 rooms..... 59th & Blackstone | 2.50 up | ..... | 3.50 up | 5.00 up |
| Drexel Arms Hotel—30 rooms..... Drexel & Oakwood Blvd. | 2.00 | 2.50 | 3.00 | 4.00 |
| Gladstone—10 rooms..... 62d St. & Kenwood Ave. | 2.00 up | 2.50 up | 3.00 up | 3.50 up |
| Hyde Park—75 rooms..... Hyde Park Blvd. & Lake Ave. | 2.50 up | 3.50 up | 3.00 up | 4.50 up |
| Lakota Hotel—125 rooms..... 30th & Michigan | ..... | ..... | 2.00 up | 3.00 up |
| Sisson—75 rooms..... 1725 E. 53d St. | ..... | ..... | 5.00 up | 7.00 up |
| Trenier Hotel—25-30 rooms..... 409 Oakwood Blvd. | ..... | ..... | 3.00 up | 3.50 up |
| Windermere-West—200 rooms..... 56th St. & Cornell Ave. | 2.50 up | 4.00 up | 3.00 up | 5.00 up |

## GRANT FOR SCIENTIFIC RESEARCH

### Committee Requests Applications for Aid to Research

The trustees of the American Medical Association have made an appropriation of $2,000 to further promising research in problems relating to scientific medicine and of practical interest to the medical profession, which otherwise could not be carried on to completion. Applications for small grants should be sent to the Committee on Scientific Research, American Medical Association, 535 North Dearborn Street, Chicago, before March 10, 1924, when action will be taken on the applications at hand.

## REPORTS WANTED ON ACCIDENTS FROM ZINC STEARATE BABY POWDERS

At the San Francisco Session of the American Medical Association, a resolution was adopted by the House of Delegates asking that steps be taken whereby the hazard to infant life from accidental inhalation of zinc stearate powders may be mitigated. Accordingly, the Board of Trustees has appointed a committee to investigate the matter and to report at the 1924 session. The committee is desirous of obtaining reports of injuries or deaths arising out of the household use of dusting powders of all kinds. The committee will appreciate it, therefore, if physicians will send in brief reports of such cases, including the age of the patient, the name of the dusting powder, and whether or not the powder contained zinc stearate. Communications should be addressed to Committee on Zinc Stearate Powders, American Medical Association, 535 North Dearborn Street, Chicago.

I. A. ABT, M.D., Chairman.

## MINUTES OF THE ANNUAL MEETING OF THE BOARD OF TRUSTEES, HELD AT HEADQUARTERS, CHICAGO, JAN. 31 AND FEB. 1, 1924

The Board met at 10:30 a. m., January 31, this meeting being preliminary to the annual meeting and for the purpose of making an inspection of the building and the mechanical equipment, and to interview the heads of the respective bureaus.

The meeting was called to order by the chairman, Dr. Wendell C. Phillips. There were present Drs. Richardson, Mitchell, Dowling, McDavitt, Brown, Upham, Williamson and Billings; also the President-Elect, W. A. Pusey; the Editor and General Manager, George H. Simmons; the Secretary of the Association, Dr. Olin West; and the Treasurer of the Association, Dr. Austin A. Hayden.

A telegram was read from the Speaker of the House, Dr. F. C. Warnshuis, regretting his inability to attend the meeting.

The minutes of the meetings of the Board held Nov. 15-17, 1923, and the minutes of the meetings of the Executive Committee of Dec. 12, 1923, and Jan. 4, 1924, were approved without reading, since copies had been submitted to each member of the Board.

The Editor and General Manager presented his annual report, which was received with the understanding that the recommendations contained therein would be given consideration during the meeting.

Drs. Richardson, Brown and Upham were appointed by the chairman a committee on elections.

Secretary West presented requests from the following constituent state medical associations for speakers from the members of the Board of Trustees and administrative officers of the Association at the annual meetings of these societies: Arkansas, Iowa, Kansas, Louisiana, Mississippi, New Mexico, Wyoming, New York, Vermont, New Hampshire, West Virginia and Texas. Dr. West emphasized the importance of the need of representatives from the officers of the Association, to attend the annual sessions of the constituent state associations, and recommended that these requests be complied with so far as it is practical to do so. The Board approved the recommendation.

### AFTERNOON SESSION, 2:10 P. M.

The recommendations of the General Manager relative to the purchase of more equipment for the mechanical department were approved.

#### REPORT ON ADVERTISING

The Secretary of the Board read the report of the special committee on the principles, policies and regulations which should be the guide in the acceptance of advertisements in all of the publications of the Association. The report of the committee, after slight modification, was unanimously adopted.

It was also decided by resolution that the Board of Trustees will support the Advertising Committee and the Executive Committee of the Board in the acceptance of advertisements for the publications of the Association under these rules and regulations.

#### PUBLIC HEALTH EDUCATION

Dr. Morris Fishbein, Assistant to the Editor, presented a written report on the education of the public through the lay press, and presented copies of articles which had already been printed in newspapers and magazines. The Board voted that this method be regarded as a step forward in methods of educating the public, and recommended that it be continued.

#### HYGEIA

Dr. John M. Dodson, executive secretary of the Bureau of Health and Public Instruction, presented a report of the work of the Bureau. The circulation of *Hygeia* was announced and statement made of the material on hand for future numbers of the periodical. The General Manager made a statement concerning the plans for the increase of its circulation and also suggestions as to the future method of the management of this periodical. The Board approved of the reports and recommendations concerning *Hygeia*.

#### PERIODIC HEALTH EXAMINATIONS

Dr. Dodson also presented the present status of the work done in the promotion of periodic health examination. This dealt chiefly with the correspondence with the medical schools in regard to the promotion of opportunities for the special education of the medical profession to enable physicians to make periodic health examinations. He also stated that copies of the blank form for making records of periodic health examination had been forwarded in large numbers to those requesting them.

After discussing the subject of periodic health examination, the following resolution was adopted by the Board: that one of the most practical measures in the promotion of periodic health examination can be accomplished through the county medical societies by encouraging periodic health examinations by the family physician of the members of families dependent on him.

#### MEDICAL EDUCATION

Dr. N. P. Colwell, secretary of the Council on Medical Education and Hospitals, presented a written report on postgraduate medical education. This report contained statements in regard to the working out of the plans reported to and approved by the House of Delegates at the San Francisco meeting. He also presented a plan formulated by the Secretary of the Association, Dr. Olin West, for the postgraduate education of physicians by means of an organization consisting of a clinical and laboratory personnel with an ambulatory laboratory, to visit and give diagnostic clinics demonstrating practical methods of management and treatment of patients, and giving opportunity for practitioners to learn to use the latest and best methods of laboratory clinical diagnosis. These clinics might remain in a county or district for approximately two weeks, using the available clinical material brought in by the members of the medical profession of the community and traveling from county to county or district to district. This method of postgraduate medical education was discussed by several members of the Board, and finally a motion was made, seconded and carried, that a committee of three composed of the Secretary of the Association, the secretary of the Council on Medical Education and Hospitals, and the local member of the Board of Trustees be requested

to continue the study of postgraduate work and to report to the Board at the meeting which will be held during the annual session of the Association in Chicago in June, as to (1) whether the American Medical Association shall of itself initiate this extension postgraduate method of teaching, and (2) whether a bureau in charge of this subject shall be established at headquarters separate from the Council on Medical Education and Hospitals.

### ZINC STEARATE DUSTING POWDERS

Dr. Paul N. Leech of the special committee composed of himself, Dr. Abt and Dr. Woodward, reported progress in regard to the investigation of the use of zinc stearate for baby dusting powder.

### ELECTIONS

The special committee on elections recommended the election of:

1. Drs. C. W. Edmunds, John Howland and Francis W. Peabody to membership on the Council on Pharmacy and Chemistry.

2. Drs. William Darrach of New York, Albert M. Barrett of Ann Arbor and C. J. White of Boston to membership on the editorial boards of the *Archives of Surgery, Archives of Neurology and Psychiatry* and the *Archives of Dermatology and Syphilology*, respectively.

3. Dr. Clifford G. Grulee of Chicago to succeed Dr. David N. Cowie and to serve as chairman, and Dr. Oscar M. Schloss of New York to fill the unexpired term of the late Dr. Emmett Holt on the editorial board of the *American Journal of Diseases of Children.*

4. Dr. W. W. Palmer of New York to succeed Dr. Louis F. Hamman on the editorial board of the *Archives of Internal Medicine.*

5. Dr. Noble Wiley Jones of Portland, Ore., to membership on the Committee on Scientific Research.

On motion the recommendations of the Committee on Elections were approved by the Board.

The secretary of the Board was directed to write letters of appreciation for services rendered to Drs. Hamman and Cowie.

The Committee on Elections further recommended that the following constitute the personnel of the new journal on otolaryngology, the publication of which had been authorized: Dr. George E. Shambaugh, Chicago, chairman; Dr. Isidor Friesner, New York; Dr. Chevalier Jackson, Philadelphia; Dr. Robert C. Lynch, New Orleans; Dr. Greenfield Sluder, St. Louis, and Dr. Eugene A. Crockett, Boston.

On motion, the Board unanimously elected the nominees presented to constitute the editorial board of the proposed journal on otolaryngology.

In compliance with the By-Laws, Dr. Arthur Dean Bevan, chairman of the Council on Medical Education and Hospitals, nominated Dr. N. P. Colwell for reelection as secretary of the Council for the ensuing year. The Board by unanimous vote elected Dr. Colwell to the position named.

### APPROPRIATIONS

The Finance Committee of the Board, after a study of the several budgets presented, recommended the appropriation of the necessary financial budgets for the several councils, the several bureaus at headquarters, for the conferences of state secretaries and section secretaries, and for other purposes, which were unanimously approved by the Board.

### EXPANSION OF ABSTRACT DEPARTMENT

In his annual report, the General Manager considered the past and present activities of the Abstract Department and recommended that this department be expanded to meet the present and future need. It was explained that the Abstract Department had been and would continue to be of great benefit to the Fellows and members of the Association, and greatly facilitated the work at headquarters. After reference to the Finance Committee, the General Manager and Editor was empowered to expand the Abstract Department as outlined.

The Board adjourned, to meet at 9 o'clock Friday morning, February 1.

### FRIDAY MORNING SESSION

The Board convened at 9:15 a. m., Friday; all members of the Board were present with the exception of Dr. Williamson, who was ill. The President-Elect, Dr. W. A. Pusey; the Treasurer, Dr. Austin A. Hayden; and the Editor and General Manager, Dr. George H. Simmons, were present.

By unanimous vote of those present, the Board made the action taken, as shown in the minutes of the meeting of Thursday, Jan. 31, 1924, official as of Friday, Feb. 1, 1924.

### SCIENTIFIC EXHIBITS

Dr. Brown, chairman of the Committee on Scientific Exhibit, discussed the work already accomplished for the meeting next June, and requested an appropriation of sufficient funds to meet the needed expense of establishing an exhibit of special material illustrating morbid anatomy and studies of the heart. By unanimous vote, the Board authorized the expenditure of a sum not to exceed $1,000 for this purpose.

### HEALTH EXHIBITS

Dr. Dowling, chairman of the special Committee on Health Exhibits, which included Drs. Upham and Williamson, made the following report:

"Your committee finds that public health exhibits are helpful and educational.

"In view of the publicity of the coming meeting of the American Medical Association, it would be advantageous to have a public health exhibit just before or immediately after the annual meeting. This would avoid confusion and not detract from the scientific meetings and would afford opportunity to exhibitors who might wish to participate in the commercial and educational exhibits.

"We believe that the promotion and operation of health exhibits should be left under the direction and supervision of the local medical society."

On motion, the report was adopted as read.

### BUREAU OF LEGAL MEDICINE

Dr. W. C. Woodward, executive secretary of the Bureau on Legal Medicine and Legislation, appeared before the Board and discussed several subjects, including federal taxation as it affects the members of the medical profession; the failure so far to secure a reducation of the tax imposed on the members of the profession for the dispensing of narcotics; the present status of the law in regard to prescribing medicinal alcohol; the request made by Dr. Woodward, now under consideration by those in authority, that narcotic and prohibition regulations should not be promulgated until notice had been sent to members of the medical profession and others who are interested in the subject; and his suggestion to the Commissioner of Internal Revenue that a medical advisory board be appointed to give him advice on the adoption of regulations for the administration of the Harrison Narcotic Act and the National Prohibition Act.

The secretary also called attention to the recent declaration of the President that he would not approve expansion in subsidies by the federal government for purposes similar to that provided by the Sheppard-Towner Act.

He also reported that there is an unusual activity throughout the country looking toward the revision of the medical practice acts, and that he is endeavoring to keep in touch with such activities in the various states, and in devoting as much time as he can command to the drafting of a model medical practice act.

After discussion of the various subjects brought forward by Dr. Woodward, the report was ordered placed on file.

At 11:40 a. m. the Board adjourned, to meet in Chicago, Saturday, June 7, at an hour to be fixed later by the Secretary of the Board.

FRANK BILLINGS, Secretary.

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**Tuberculosis in Canada.**—Canada's deaths from all forms of tuberculosis in the nine provinces, for 1922, numbered 7,559, a decrease of 135 deaths over 1921. The rate per hundred thousand for 1922 is 84.4. Canada has spent on sanatoriums built or building, $11,000,000.

# Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

## ALABAMA

**Personal.**—Dr. Douglas L. Cannon, Montgomery, state health department, has been appointed secretary of the Medical Association of the State of Alabama for the unexpired term of the late Dr. Henry G. Perry of Montgomery. William T. Fales, B.S., Johns Hopkins School of Public Health, Baltimore, was elected director of the bureau of vital statistics of the state board of health succeeding the late Dr. Perry, and Dr. Daniel T. McCall, Mobile, has been appointed a member of the state board of health to fill the vacancy created through the death of Dr. Vivian P. Gaines, Mobile.——Dr. Carl A. Grote, former city and county health officer of Huntsville, who for some time has been health officer of Greensboro, N. C., will return to Huntsville to become associated with the Merrimack Manufacturing Company.——Dr. Nathaniel A. Barrett has been appointed managing director of the Birmingham Baptist Hospital to succeed Dr. J. M. Long.

## CALIFORNIA

**Qualifications for Public Health Nurses.**—The California State Board of Health recently adopted the following prerequisites for examination for certification as a public health nurse in California:

Applicants for examination for certificate as public health nurse shall be: (1) Registered nurses under the laws of California; (2) shall have completed a public health nursing course of from four to eight months in a school approved by the California State Board of Health, or (3) shall have completed at least a semester (four months) of postgraduate work in social service, including theory and practical work, or (4) shall present evidence of having engaged in general public health nursing at least two years in connection with a public health organization approved by the state board of health; (5) all applications for examination as public health nurse shall be filed in the office of the state board of health and shall be passed on by a committee of the board; (6) on examination, credit of 5 per cent. will be given to applicants who have completed a four months' course in public health nursing, and 10 per cent. to applicants who have completed an eight months' course in public health nursing.

## DISTRICT OF COLUMBIA

**Annual Meeting.**—At the annual meeting of the Medical Society of the District of Columbia, Washington, January 2, the following officers were elected for the ensuing year: president, Dr. John D. Thomas; secretary, Dr. Coursen B. Conklin, and legislative chairman, Dr. William J. Mallory.

**Health Lecture Series.**—The second series of public health lectures by the Women's Welfare Association of Washington has been announced. Lectures will be given semimonthly, Sunday afternoons at the New National Museum.

February 10.—Dr. Royal S. Copeland, U. S. Senator from New York: "Methuselah's Secrets."
February 24.—Dr. Eugene L. Fisk, Life Extension Institute, New York, "On Extending the Health Span and Working Span of Life."
March 9.—Dr. Shepherd I. Franz, Government Hospital for the Insane, Washington, "The Restoration of the Disabled."
March 23.—Dr. Harvey W. Wiley, health editor, Washington: "Do You Want to Live Longer?"
April 6.—Dr. James P. Leake, U. S. Public Health Service, Washington: "How to Protect the Community Against Diphtheria Infection."
April 27.—Dr. Clinton T. Messner, chief dental surgeon, U.S. P. H. S., Washington: "Teeth and Health."

## FLORIDA

**Negro Physician Sentenced.**—According to reports, Dr. J. Harvey Smith, Jacksonville, was recently sentenced to one year in the federal penitentiary at Atlanta, Ga., for violation of the Harrison Narcotic Law.

## ILLINOIS

**Public Health Nurses.**—A recent survey shows that 290 public health nurses are employed in Illinois outside of Cook County. All but two municipalities of 8,000 or more population and thirty-five with less than 8,000 people employ at least one nurse each. The twenty-two counties that have no public health nursing service of any character include Bond, Boone, Clay, Clinton, Edwards, Effingham, Fayette, Gallatin, Hamilton, Hardin, Jasper, Johnson, Marshall, Mason, Massac, Menard, Mercer, Monroe, Pope, Putnam, Scott and Wayne. These counties represent about 350,000 people. In other words, about 95 per cent. of the people of the state enjoy to some degree the benefits of public health nursing service. The greatest number of public health nurses employed in any county except Cook, is twenty in Rock Island County, then comes Winnebago with nineteen; Sangamon, seventeen; Kane and Will, fourteen each, and Peoria, thirteen. Lake, La Salle, Macon, Madison and St. Clair have ten each. Champaign and Henry each employ seven.

### Chicago

**Society News.**—Dr. Albert A. Berg, New York City, will address the Chicago Medical Society, February 13, on "The Present Surgical Treatment of Gastric and Duodenal Ulcer." Dr. Berg will hold an operative clinic at the Cook County Hospital in the afternoon preceding the meeting.

**Chicago Medical Society.**—At a meeting of the society, January 30, Dr. Emanuel Libman, New York, gave an address on "Subacute Bacterial Endocarditis in the Bacterial and Bacteria-Free Stages." Dr. Libman was the guest of honor at a dinner at the Hamilton Club preceding the meeting.

**Personal.**—Dr. Wilhelmina Jacoba Jongewaard, Chicago, has been appointed to the infant and child hygiene division of the Indiana State Board of Health to succeed Dr. Myrta Wilson, who resigned to go to Africa as a medical missionary.——Dr. John D. McGowan has retired as chief surgeon of the Commonwealth Edison Company after twenty-five years' service. Dr. Arthur V. Allen will succeed him.

**Physicians Lose Connecticut Licenses.**—Six Chicago physicians have been barred from practicing in Connecticut according to reports. They are among the 129 whose licenses were revoked on charges of "fraud and deceit" by the special grand jury investigating the diploma mill scandal. Chicagoans named in the proceedings, according to reports, were Henry J. Schireson, Sigurd Jergens, Nicholas A. Perri, Max Feldman, Monte Val Robinson and Edward A. Kesten. The first two hold diplomas from the Kansas City College of Medicine and Surgery, the others from the St. Louis College of Physicians and Surgeons. Schireson, according to reports, was sentenced in New York for six months for violating the medical statutes and for ten months in Pennsylvania for conspiracy to defraud. He was also indicted in Utica, N. Y., for grand larceny and escaped.

## INDIANA

**Birthdays.**—Dr. Abner H. Shaffer, Huntington, a Civil War veteran and former member of the state legislature, celebrated his ninety-fifth birthday, January 15.

**Pardon Refused.**—A plea for clemency for Dr. Martin E. Klingler, Garrett, was presented to Attorney General Daugherty, January 14, by Senators Watson, Willis, Fess and Fairfield. Dr. Klingler was sentenced to six months in jail and fined $500 for violation of the Harrison Narcotic Law. The petition, signed by several thousand names, showed that the violation was technical. Attorney General Daugherty declined to approve the petition for pardon, January 26.

## KANSAS

**Date of State Medical Meeting.**—At a meeting of the executive council of the Kansas State Medical Society in Kansas City, January 23, it was decided to hold the 1924 meeting of the society at Wichita, May 7-8. Members of the council were guests of the Wyandotte County Medical Society following the meeting.

## LOUISIANA

**Fund for Medical Publications.**—A $12,000 foundation, to be known as the Maurice Stern Fund for Medical Literature, has been given to the Tulane University School of Medicine, New Orleans, by Mrs. Maurice Stern as a memorial to her husband. The income from this will be used to purchase medical periodicals for the school library, and for medical books selected by the faculty.

**Child Welfare and Milk Surveys.**—Dr. Samuel J. Crumbine of the American Child Health Association held a conference with Dr. Oscar Dowling, president of the state board of health, January 21, for the purpose of discussing the development of child welfare in Louisiana. The American Child Health Association will conduct a state-wide milk survey in Louisiana on completion of the survey in Kentucky, it was announced. A milk campaign in Florida was recently completed.

## MARYLAND

**Hospital News.**—Alterations to an old building of the Maryland General Hospital have been undertaken at a cost of $50,000 and will be completed in about six weeks. The

capacity of the hospital will be increased from 170 patients to 250.——Ground was broken, January 10, for the third unit of the Children's Hospital School, Baltimore, which will have 100 beds. The structure will be of white marble and will be ready for occupancy about September 1.

## MASSACHUSETTS

**Proposed Medical Legislation.**—Three bills affecting the medical profession are before the legislature. House Bill No. 62 is a petition relative to the qualifications of applicants for examination for registration as physicians; House Bill No. 223 is a petition for an act to require midwives to be graduates of a reputable school. House Bill 414 would require the vaccination of children in private schools.

**Advisory Committee to Veterans' Bureau.**—Dr. Joel E. Goldthwait, Boston, is chairman of an advisory committee which will cooperate with the U. S. Veterans' Bureau on matters of hospitalization, under the auspices of the American Legion, in the First District, comprising Massachusetts, Maine, Rhode Island, New Hampshire and Vermont. With Dr. Goldthwait will serve: Drs. Franklin G. Balch, Lloyd V. Briggs, Frederick J. Cotton, Harry W. Goodall, Harvey Cushing, John B. H. Hawes, George F. Keenan, William J. Mixter, Charles F. Painter, David D. Scannell and Philip D. Wilson of Boston; Robert J. Carpenter and George L. Curran of North Adams; Parker M. Cort and Ralph H. Seelye of Springfield; Brace W. Paddock and Melvin H. Walker, Jr., of Pittsfield; Homer Gage, Worcester; Francis W. Anthony, Haverhill; Samuel W. Goddard, Brockton; Charles A. Pratt, New Bedford, and Philemon E. Truesdale, Fall River.

**Personal.**—George C. Whipple, S.B., Harvard University, Boston, who has for nine years represented the field of sanitary engineering on the public health council of Massachusetts, has resigned.——Dr. Enos H. Bigelow, president of the Massachusetts Medical Society, has been appointed director of the division of communicable diseases in the state health department.——Dr. Henry J. Kelley has been appointed city physician of Beverly to succeed Dr. Dwight Cowles.——Dr. John L. O'Toole has been elected a member of the board of health of Haverhill, succeeding Dr. Francis A. Sullivan.——Dr. Robert D. Curtis, Medical School of Harvard University, Boston, has been appointed director of child hygiene for the Community Health Association and has been given a year's leave of absence from the Massachusetts General Hospital to carry on the work.——Dr. George S. Derby, assistant professor of ophthalmology, Medical School of Harvard University, has been appointed Williams professor of ophthalmology succeeding Dr. Alexander Quackenboss, who retired recently.

## MICHIGAN

**Public Health Committee Enlarged.**—The state association of nurses, state tuberculosis association and the association representing the social agencies of the state were admitted to membership in the Michigan Committee on Public Health Information at a meeting in Detroit, January 17. Demands for lectures have so increased, the president stated, that it is necessary to call on the state medical association for additional lecturers.

**Personal.**—After litigation extending over a period of fifteen years, Dr. Lewis J. Marshall, Adrian, has received $15,437 damages from the Wabash Ralway for injuries received while traveling on one of the company's trains in February, 1908.——Dr. William W. Norris has been elected president of the Mulliken Board of Commerce.——Dr. James R. Kingsley has been elected head of the alumni of the University of Michigan, Ann Arbor.——Dr. James D. Munson has resigned as superintendent of the Traverse City State Hospital following thirty-eight years of service, the resignation to become effective, July 1. Dr. Earl H. Campbell, Newberry State Hospital, will succeed him.——Dr. Charles P. Drury has resigned as city health officer of Marquette.

## MISSOURI

**Physician Fined.**—It is reported that Dr. John D. Ball, Lexington, was fined $500, January 7, by Judge Reeves of the federal court for violation of the Harrison Narcotic Law.

**Personal.**—Dr. Martin F. Engman, St. Louis, has been elected a corresponding member of the Danish Dermatological Association and of the French Society of Dermatology and Syphilology.——Dr. Roland Hill has been elected president of the St. Louis Medical Society.

## NEBRASKA

**Hospital News.**—The Fremont Hospital, Fremont, will be removed to a residence recently purchased, which will be entirely remodeled. The hospital will be known as the Military Avenue Hospital.

## NEW YORK

**Pathologists Elect.**—At the annual meeting of the New York Pathological Society in January, Dr. William H. Woglom was elected president; Dr. George L. Rohdenburg, vice president; Dr. Francis Carter Wood, treasurer, and Dr. Leila C. Knox, secretary.

**Labor Legislation Proposed.**—Measures which have been recommended by the American Federation of Labor for legislative enactment in New York, are as follows: (1) establishment of state insurance as the only authorized form of insurance for workmen's compensation; (2) eight hour work day and forty-eight hour week for women workers and minors; (3) supplying textbooks in the schools, and medical, surgical and dental treatment for school children, with school lunches at cost.

**Society News.**—The annual meeting of the Association of Tuberculosis Clinics was held, January 24, at the New York Academy of Medicine.——The annual meeting of the Association of the Alumni of the College of Physicians and Surgeons in the City of New York was held, January 29.——The annual convention of the Women's National Medical Association of New York will be held in Rochester, April 21.——At the annual meeting of the Associated Physicians of Long Island in Brooklyn, Dr. Herbert Dana Schenck was elected president and Dr. James C. Hancock, secretary.

**Societies Oppose Bill.**—A bill prepared by the state department of education and indorsed by the state health department has been presented to the legislature. It would require physicians to pay an annual registration fee of $2 in addition to the registration now in effect; county medical societies would relinquish their power of prosecution to the attorney general and the use of the term "doctor" would be prohibited except by persons authorized to practice medicine by the state department of education. Members of the Kings County and Queens County medical societies voted unanimously to oppose the bill.

**Vote on Principles of Medical Ethics.**—At the 1923 meeting of the Medical Society of the State of New York resolutions were adopted favoring changes of the principles of conduct of the society to bring them into conformity with the principles of medical ethics of the American Medical Association. These resolutions were submitted by mail, Dec. 5, 1923, to a referendum vote of members of the society. There were 10,125 votes cast in favor of adopting the revised principles of conduct. This is a liberal majority, hence the new principles become effective and are binding on all members of the Medical Society of the State of New York.

**Hospital News.**—A new building is under construction at St. Rose's Free Convalescent Home, Hawthorne.——A general hospital and sanatorium has been opened at Ronkokoma, L. I., which will be known as the Lakeside Hospital. Dr. William H. Lucas has been appointed physician in charge.——The Queensboro Home for the Blind was opened in Richmond Hill, Dec. 20, 1923.——As a memorial to its first president and chief of staff, the late Dr. Richard B. Coutant, a nurses' home has been opened at the Tarrytown Hospital, and a children's ward has been added. Under the leadership of its new president, Dr. Joseph A. Blake, a campaign to raise $50,000 for additional buildings will be started soon.

### New York City

**Convalescent Serum for Measles.**—The department of health announces that it will make convalescent serum available for general use in young children exposed to measles. As the supply is at present limited, it has been decided to distribute it among children under 3 years of age, and under exceptional circumstances only to older children.

**Nurses Home for Mount Sinai.**—The trustees of Mount Sinai Hospital have ratified the program for a $1,500,000 home and training school for nurses, and have themselves subscribed $735,000. A pledge of $200,000 was made by George Blumenthal, president of the hospital. The training school will occupy the south side of Ninety-Ninth Street opposite the hospital.

**Merger of Jewish Hospitals.**—Plans to amalgamate the Beth Moses and the Bikur Cholim hospitals of Brooklyn will be placed before the officials of these institutions soon. These

hospitals are in the same neighborhood, and each is planning large additions. It is believed that it is too much to ask Brooklyn to support two institutions which could work more efficiently by uniting.

**Personal.**—A dinner was given by the governors of Broad Street Hospital, February 1, at the Hotel Astor, to celebrate Dr. Huber's seventieth birthday. Dr. Huber is a director and attending physician to the hospital.——Dr. David Reisman, of the University of Pennsylvania, addressed the section of historical medicine, New York Academy of Medicine, January 31, on "A Physician in the Papal Chair."

**Police Commissioner Wants Heroin Outlawed.**—In an address before the Medical Society of the County of New York, January 28, Deputy Police Commissioner Dr. Carleton Simon made a plea for outlawing heroin. He estimated there is 76,041 ounces of heroin used annually by drug addicts in New York City against 58.38 ounces legitimately prescribed by the entire medical profession of the state. Dr. Simon stated that at least 80 per cent. of physicians consulted are of the opinion that heroin has no specific use in medicine.

**Academy Elects Section Officers.**—At the annual meeting of the New York Academy of Medicine the following officers were elected for the sections: ophthalmology, chairman, Dr. Ben Witt Key, and secretary, Dr. David H. Webster; orthopedic surgery, chairman, Dr. Sigmund Epstein, secretary, Dr. Harry Finkelstein; medicine, chairman, Dr. John H. Wyckoff, Jr., secretary, Dr. Howard F. Shattuck; genito-urinary surgery, chairman; Dr. Julius J. Valentine, secretary; Dr. William Francis McKenna; historical medicine, chairman, Dr. Leon Pierce Clark, secretary, Dr. Charles E. Atwood.

**Segregation in Special Cardiac Classes.**—A committee of the Association for the Prevention and Relief of Heart Disease, which recently completed an investigation begun seven years ago at the request of the superintendent of schools, has submitted its report. The committee believes that segregation into small groups is ideal in caring for tuberculous, crippled and mentally defective children, but it is expensive and unnecessary for nine tenths of children with heart disease. The report recommends that money now spent on these classes be used to insure better diagnosis, reporting and following up of heart disease cases.

**A Directory of Charities.**—The National Information Bureau New York City, January 29, issued a list of 150 accredited national philanthropies to protect members of the New York Merchants' Association from fake charity drives. Each member will be supplied with a booklet listing the valid charities and booklets will be sent to chambers of commerce in Boston and St. Louis and eventually every commercial body in the country. Only organizations that are truly national, and nonsectarian and which meet the standards of the National Information Bureau are included in the list, which was compiled after an investigation of about 2,000 charities.

## NEW JERSEY

**Illegal Practitioners Fined.**—The following persons, it is reported, have been convicted of illegally practicing medicine in New Jersey and were fined as follows: William F. Trumpore, chiropractor, $200; Peter Eagle, $200; Pauline Pervey, midwife, $200; George Heufel, osteopath, $200; John Varga, $200; Susan Jablecnik, midwife, $200; James S. Le Vine, chiropodist, $200; Salvatore Sica, M.D., $200; Guiseppe Palmieri, M.D., $200. The license of Ann P. Kokas, a midwife, was revoked.

## OHIO

**Dr. Crile Resigns.**—Dr. George W. Crile, for twenty-three years professor of surgery, Western Reserve University Medical School, Cleveland, and house surgeon of the Lakeside Hospital, has resigned, effective, July 1. Dr. Crile will devote his time to research work and to private practice at the Cleveland Clinic and Hospital. Dr. Elliott C. Cutler, Peter Bent Brigham Hospital, Boston, will succeed Dr. Crile in both positions.

**Personal.**—Dr. Arthur J. McCracken was reelected city health officer of Bellefontaine, Dec. 11, 1923.——Dr. James M. Rector, Columbus, addressed the members of the Ohio (W. Va.) County Medical Society at Wheeling, W. Va., Dec. 14, 1923, on "Gastro-Intestinal Disturbances."——Dr. Jacob F. Stultz, Urbana, county coroner, has been appointed part-time county health commissioner of Champaign County to succeed Dr. Henry J. S. Dickson.——Dr. John W. Hutchens, Scioto-ville, has been appointed health commissioner of Portsmouth to succeed Dr. Oral D. Tatje.——Dr. Frank J. Crosbie, Junction City, has been appointed county health commissioner for Perry County to succeed Dr. Charles Stanley Runk, New Lexington.

## OREGON

**Personal.**—Dr. Mary L. Hazlett has been appointed to the city health bureau of Portland to succeed Dr. Myra A. Brown-Tynan, who resigned recently.

## PENNSYLVANIA

**Annual Conference of Tuberculosis Society.**—A proposal to establish county health units in Pennsylvania was discussed by the board of directors of the Pennsylvania Tuberculosis Society at the thirty-second annual meeting, Harrisburg, January 16. The board expressed its approval of the movement in the following resolution:

*Resolved*, That, in the judgment of the board of directors of the Pennsylvania Tuberculosis Society, it is desirable that those interested in and responsible for the conservation and promotion of health in Pennsylvania should take steps to develop a greater sense of local responsibility throughout our state for the improvement of health conditions, both as concerns the individual and the community, and further be it

*Resolved*, That this board of directors favors the enactment of such legislation as may be necessary to provide public health machinery in the counties of this state, exclusive of Philadelphia County, and also favors steps being taken to secure the enactment of such legislation by the General Assembly in its 1925 session.

It is understood that the state department of health is working on a bill embodying such proposal for the 1925 legislature. The directors empowered the executive committee of the Pennsylvania Tuberculosis Society "to take action looking to the establishment of a standard program for local tuberculosis organizations." The membership of the board was increased from twenty-seven to thirty-one. Among the directors reelected are Dr. Charles J. Hatfield, formerly managing director of the National Tuberculosis Association; Governor Gifford Pinchot, and Dr. Charles H. Miner, state secretary of health. The board organized by reelecting the officers who served in 1923: R. S. Knapp as president; Dr. James M. Anders and John H. Scheide, vice presidents; Dr. Ward Brinton, secretary; J. William Hardt, treasurer. Dr. Charles H. Miner, secretary of health of Pennsylvania; Dr. Warren F. Draper, assistant surgeon general, U. S. Public Health Service; Louis I. Dublin, statistician, Metropolitan Life Insurance Company; James A. Tobey, administrative secretary, National Health Council; Dr. Howard C. Frontz, president, Pennsylvania State Medical Society; Dr. Charles J. Hatfield, executive director, Henry Phipps Institute, Philadelphia, and Dr. Wade Wright, Department of Industrial Hygiene, Harvard University School of Public Health, were among the speakers.

### Philadelphia

**Jewish Federated Charities Drive.**—The Federation of Jewish Charities held a drive for $1,400,000 during the week beginning January 14. The total amount pledged on January 19 was $1,319,768.73, which was subscribed by 17,220 persons.

**City to Erect Hospital Buildings.**—Construction of two modern buildings at the Philadelphia Hospital for Mental Diseases at Byberry will begin within the next few weeks. They will cost more than $150,000 and with the three similar buildings under construction, will accommodate the insane patients now at Blockley.

**Medical School Building.**—Plans for the erection of a wing to the University of Pennsylvania Medical School to house the laboratories of anatomy and physiologic chemistry, have been submitted to the board of trustees by Dean William Pepper. This addition is made possible by the recent gift of the Rockefeller Foundation and the General Education Board, which insures the university a building fund of $1,000,000 on condition that the university raises $500,000. The funds are already in hand. The new addition will be a T shaped wing immediately adjoining the present building on Hamilton Walk, permitting the university's laboratories of physiology, pathology, pharmacology, anatomy and physiologic chemistry to be together.

## RHODE ISLAND

**Illegal Practitioner Fined.**—According to reports, Luigi Mara, a Natick druggist, was fined $50 and costs by Judge Herbert, January 10, on a charge of practicing medicine without a license.

**Amendments to Medical Practice Act.**—A bill, designed to facilitate the prosecution of unregistered physicians in Rhode Island was introduced by Representative Strachan, January 25. This measure increases the penalty for practicing medi-

cine without a license to $250 for the first offense and $500 or imprisonment for six months for subsequent offenses, and provides that only United States citizens or person having declared their intention of becoming citizens are eligible to take the examination for a license.

## TENNESSEE

**New Medical Journal.**—The *Memphis Medical Journal*, official organ of the Memphis and Shelby Medical Society, appeared in January. It will be published monthly. Dr. John A. McIntosh, Jr., is editor and Drs. Joseph A. Crisler, Conley H. Sanford, Harry C. Schmeisser, Frank W. Smythe, James B. Stanford and Newton S. Stern are the associate editors.

## TEXAS

**State Health Officer Resigns.**—Dr. William H. Beazley, Austin, state health officer, resigned, January 31.

**Annual Nutrition Institute.**—The second annual Nutrition and Health Education Institute was held at the University of Texas, Austin, February 6-9, under the auspices of the Bureau of Extension. Physicians, public health workers and nurses, physical directors and home economics teachers attended. Series of lectures were given by Dr. William P. Lucas, professor of pediatrics, University of California Medical School, San Francisco, and Prof. C. E. Turner, department of biology and public health, Massachusetts Institute of Technology, Boston.

## UTAH

**City Physician Appointed.**—Dr. Arnold E. Robison has been appointed city physician of Provo to succeed Dr. James C. Clark, who resigned recently.

## VIRGINIA

**Pharmacists Want Protection.**—Senator Smith, Norfolk, will present a bill at the next session of the legislature asking for a complete revision of the pharmacy laws. This bill will make it a felony to operate a drug store where no registered druggist or registered assistant is employed.

**Richmond to Bar Quacks.**—The committee on ordinance, Richmond city council, recently passed a measure making it unlawful for any person to practice in Richmond as a physician or "engage in the art of healing bodily or mental ills" without first securing a city license. The measure further provides that before such license is issued the applicant shall present a certificate from the state board of medical examiners.

## WISCONSIN

**"Health Institute" Proprietors.**—A blanket warrant was issued, January 23, it is reported, for the proprietors of the Milwaukee Health Institute, who are at liberty on bail (THE JOURNAL, Dec. 29, 1923, p. 2193). The defendants are Wallace Rheinhardt, Nathaniel Rogers and Andrew Morgan. The warrant charges conspiracy to defraud.

## CANAL ZONE

**Child Health Program.**—At the invitation of the acting governor of the Canal Zone, and the chief health officer, Miss S. L. Jean, director of the health education division of the American Child Health Association, and an assistant will sail for Panama this month to inaugurate a school health program there. Courses will be given for teachers on child health training similar to courses given in the United States, and a program outlined on which future work can be based. Posters, poetry, plays and pictures used to instil health habits among American school children will be used.

**Memorial to French Canal Builders.**—The old Chiriqui prison on Las Bovedas has been razed and a memorial to French engineers who died while attempting to construct the canal (1880-1888) has been erected on the site which will be known as the Plaza Frances. It was formally dedicated, Dec. 4, 1923, by the French envoy Comte De Bourdoncle De Saint Salvy who came from France especially for the ceremony. In the casements of the old fort which forms the background, a series of plaques recording the history of the canal project from its inception in the sixteenth century are set. In front of a beautiful column are statues of French engineers and a pyramid surmounted by a Gallic cock (chanticleer). It is said the total number of deaths among French employees was 22,189 in the eight years and that the annual death rate was 240 per thousand population.

## PHILIPPINE ISLANDS

**Medical Association Meetings.**—The joint annual meeting of the Philippine Islands Medical Association and of the Manila Medical Society was held in Manila, Dec. 17-19, 1923, under the presidency of Dr. Antonio G. Sison, Manila. Dr. E. V. Pineda of the Culion Leper Colony gave an address on a "Pathological Survey of the Causes of Death from Leprosy at the Colony," and Capt. W. D. Fleming, M. C., U. S. Army, spoke on "Insulin from the Laboratory Standpoint." Dr. Sison was reelected president of the Philippine Islands Medical Association; Drs. Luis Guerrero and Pontenciano Guazon were elected vice presidents, and Dr. Isabelo Concepcion, secretary-treasurer. The next annual meeting of the association will be held in Manila, December 18-20.

## CANADA

**Government to Operate Sanatorium.**—The Laurentian Sanatorium for the Treatment of Tuberculosis, erected by the Laurentian Tuberculosis Society at Ste. Agathe Des Monts, Quebec, has been taken over by the federal and provincial governments to be operated under the Public Charities Act. The government will renovate the institution and enlarge it to 300 beds. The government commandeered the hospital in 1918 for tuberculous soldiers and enlarged it to 210 beds.

**Eight New Medical Societies Organized.**—The Saskatchewan Medical Association recently decided to call physicians of the province together to organize a number of district medical societies. Dr. Thomas C. Routley, general secretary of the Canadian Medical Association, and Dr. Alexander MacG. Young, general secretary of the Saskatchewan Medical Association, visited the centers chosen during November, 1923, to outline the basis of the suggested organization. In accordance with these arrangements the following district medical societies were organized and officers elected: Yorkton, president, Dr. Thomas A. Patrick; Saskatoon, president, Dr. George R. Morse; Battleford, president, Dr. William J. Stanley Millar; Prince Albert, president, Dr. David P. Miller; Regina, president, Dr. Thomas A. Morrison; Swift Current, president, Dr. Charles McArthur; Moose Jaw, president, Dr. Thomas B. Underhill, and Weyburn, president, Dr. David W. Allen.

**Personal.**—Dr. Joseph L. Jackson has been appointed an associate professor of the University of Alberta Faculty of Medicine, Edmonton.——Dr. Eric A. Linell, a graduate of the University of Manchester, England, has been appointed associate professor of anatomy at the University of Toronto Faculty of Medicine. He has held both the Leech Research Fellowship and the Tom Jones Research Fellowship in the University of Manchester.——Dr. George A. La Mount, Vancouver, B. C., has been awarded a traveling scholarship by the American Public Health Association. He will travel through the United States to investigate child health activities.——Dr. William T. Wilson, Penetanguishene, Ont., has been appointed superintendent of the Ontario Hospital for the Insane, Coburg, to succeed Dr. Peter McNaughton, who has accepted the position of superintendent of the Ontario Hospital for the Insane, Brookville.——Dr. William J. Henry, Toronto, has been appointed a member of the staff of the Seamen's Hospital, London, England.——Dr. Frederick E. Gullison has been appointed port physician at Yarmouth, N. S., for the United States government.——Dr. George A. Ramsay, London, Ont., spoke on "The Pathology of the Gastro-Intestinal Tract," before the North Waterloo Medical Society at Kitchener, Ont., recently.

## GENERAL

**Commissions for Sanitarians.**—Senator Copeland introduced, January 2, a bill which would give the same commissioned status to sanitary engineers as medical officers in the U. S. Public Health Service now have. Another bill, with similar provisions, but also affecting the public health service, will be introduced in the near future.

**National Health Council Election.**—At the annual meeting of the council, January 9, Dr. Lee K. Frankel was reelected chairman. Other officers elected were: Dr. William F. Snow (American Social Hygiene Association), vice chairman; James L. Fieser (American Red Cross), recording secretary, and Dr. Linsly R. Williams (National Tuberculosis Association), treasurer.

**Bill to Control Sale of Shaving Brushes Proposed.**—A bill has been introduced by Representative Winslow of Massachusetts making it unlawful to import any shaving brush containing horsehair, or to ship such article in interstate commerce. The proposed legislation is based on the assump-

tion that any shaving brush made of horsehair is *per se* contaminated by anthrax.

**American Association for the Study of Goiter.**—At the meeting of the association in Bloomington, Ill., January 23-25, all the officers of the association were reelected as follows: president, Dr. Edwin P. Sloan, Bloomington; vice president, Dr. George W. Newell, Burlington, Wis.; secretary, Dr. Judson D. Moschelle, Indianapolis, and treasurer, Dr. Julius R. Yung, Terre Haute, Ind.

**Other Countries Study American Food Laws.**—Representatives are now in this country from France, Italy, England, Russia, Poland, Spain, Holland, Belgium, Greece, Jugoslavia, Germany, Switzerland, Norway, Mexico, San Salvador, Brazil, Chile and Canada to study the analytical work of the U. S. Department of Agriculture and progressive legislation to enforce standards imposed under the Food and Drugs Act.

**Public Health Schools.**—The summer courses in public health given by the U. S. Public Health Service will be given this year at the University of Michigan, Ann Arbor, the University of California, San Francisco, the University of Iowa, Iowa City, and Columbia University, New York. A campaign for students for the four schools is under way and 100,000 letters to physicians, colleges and sanatoriums will be mailed.

**Bill on Mailing of Diplomas Introduced.**—A bill to prohibit medical diplomas or certificates of correspondence schools from being sent through the mails has been introduced in the House by Representative Kindred of New York. The bill forbids the transmittal through the mails of a medical diploma or certificate of any kind, issued by any medical school having a correspondence course of medical instruction, and declares such act to be fraudulent use of the mails.

**Registry of Radiological Technicians.**—The Radiological Society of North America, the American Roentgen Ray Society and the Canadian Roentgen Society have combined to support the American Registry of Radiologic Technicians. A working bureau has been established in which technicians who are properly qualified are registered. The registry is under control of the following radiologists: president, Dr. Edward W. Rowe, Lincoln, Neb.; vice president, Dr. Byron C. Darling, New York City, and secretary, Dr. Edward S. Blaine, Chicago.

**Radiologists Elect.**—At the annual meeting of the Radiological Society of North America, held at Rochester, Minn., Dec. 3-7, 1923, the following officers were elected for the ensuing year: president, Dr. Arthur W. Erskine, Cedar Rapids, Iowa; vice presidents, Drs. Edward H. Skinner, Kansas City, Mo., Leon J. Menville, New Orleans, and Isador S. Trostler, Chicago, and secretary-treasurer, Dr. Manly J. Sandborn, Appleton, Wis. The next annual meeting will be held in Kansas City, Mo., December 8-12. The society has conferred a gold medal on Mr. H. Clyde Snook for his invention of the modern transformer type of roentgen-ray apparatus.

**Birth Control Measure in Senate.**—Senator Cummins of Iowa introduced, January 31, a measure to remove the existing prohibition on the circulation of information concerning contraceptive methods and to safeguard the circulation of such information by requiring certification by at least "five graduate physicians lawfully engaged in the practice of medicine." The bill, which was proposed by the Voluntary Parenthood League, does not attempt to solve the birth control question. It simply proposes that information as to methods to prevent conception, when circulated under conditions presented by the bill, be relieved from the ban placed on it.

**Health Book Month.**—The National Association of Book Publishers have designated February as Health Book Month. The International Book Review of the *Literary Digest* will carry a leading article entitled "Give Me Health and a Day," reviewing some fifteen health books. A list of health books for popular reading has been prepared by the National Health Library and a new edition of the Selected Bibliography of Books on Health has been issued by the National Health Council. The first five books in the national health series, "Man and the Microbe," "The Baby's Health," "Personal Hygiene," "Community Health," and "Cancer" will be ready this month.

**Pharmacopeial Standards for Medicinal Spirits.**—Two additional titles to those already announced for admission to the U. S. Pharmacopeia, tenth revision, are standards for whisky and brandy as medicines, in response to a demand by physicians. All physicians of the general revision committee, acting as a subcommittee were appointed to study the situation and take necessary action. The following statement was issued: "In view of the fact that a large number of physicians in the United States believe alcohol to be a valuable therapeutic agent, and in view of the widespread adulteration of the alcoholic liquors at present available, the members of this reference committee feel that for the protection of the public, there should be an official standard for medicinal spirits."

**Society Elections.**—At the annual meetings of the following societies in St. Louis, Dec. 27-29, 1923, the following officers were elected: American Pathological Society, president, Dr. Alfred S. Warthin, professor of pathology, University of Michigan Medical School, Ann Arbor, and secretary, Dr. Edward B. Krumbhaar, Graduate School of Medicine of the University of Pennsylvania, Philadelphia; Drs. Philip A. Shaffer, St. Louis, and D. W. Wilson, Philadelphia, were elected president and secretary, respectively, of the American Society of Biological Chemistry, and Prof. A. J. Carlson, University of Chicago, and Prof. C. W. Greene, University of Missouri, Columbia, president and secretary, respectively, of the American Physiological Society. The next annual meetings of these societies will be held in Washington, D. C., next December.

**Interdepartmental Social Hygiene Board.**—A bill authorizing the department of justice to take over duties heretofore performed by the Interdepartmental Social Hygiene Board was introduced into Congress, January 3, by Mr. Jones of Washington. It authorizes the department of justice to investigate vice in the vicinity of army and navy camps, posts, stations, forts, ports or hospitals in the continental United States, the territories and insular possessions and the Panama Canal Zone, or at any place under the authority of the United States where armed forces of the government or ex-service men are stationed. The bill also provides that the department of justice shall take over such duties, books, records, equipment and personnel of the Interdepartmental Social Hygiene Board as may be directed. An appropriation of $325,000 is asked to carry out the purposes of the act.

**Bequests and Donations.**—The following bequests and donations have recently been announced:

Wilkes-Barre, Pa., for a laboratory for investigation of gastro-intestinal disease, $500,000, by Mrs. McClintock, in memory of her husband, Dr. Andrew Todd McClintock.

Presbyterian Hospital, New York City, $401,045, under the will of Mrs. Marie Torrance Hadden, on the death of certain other beneficiaries.

Noyes Hospital, St. Joseph, Mo., $400,000, by the will of Mrs. Serepta Noyes. One fourth is to be used for a nurses' home.

New England Baptist Hospital, $120,000, for the Haskell Nurses' Home, and $100,000 for new buildings, under the will of Edward H. Haskell of Newton, Mass.

Roosevelt Hospital, New York City, through the death of Richard McLane comes into possession of two-fifths of a trust fund of $246,147, set apart by his father, Dr. James W. McLane in 1912.

Jefferson Hospital, Philadelphia, $100,000 by Alba B. Johnson of Philadelphia.

Brooklyn Hospital, Brooklyn, $50,000, from Mrs. Mary S. Young.

Disabled Veterans of the World War, $25,000, by the Knights of Columbus.

Orange County, N. Y., for a new children's hospital in memory of the late President Harding, $25,000, by Frederic A. Juilliard of Tuxedo Park.

Society and Home for Incurables, New York, $20,000, by the will of Watson B. Dickerman.

Medical College Dispensary, New York University and Bellevue Hospital, $11,000, anonymously; $5,000 from Mrs. Bettie F. Holmes and $1,000 from Mrs. W. K. Vanderbilt.

Wesley Memorial Hospital, Atlanta, Ga., $10,000, by James N. Renfroe, in memory of his mother.

Springfield (Mass.) Hospital, $10,000, by the will of A. Willard Damon.

University of Illinois, Chicago, for a lecture course on bacteriology, $10,000, by Mrs. Albertine Germann.

Brooklyn Jewish Hospital, $5,000 for the purchase of an electrocardiograph by Louis J. Joffe.

New York Orthopedic Hospital, New York City, and the Newport (R. I.) Hospital, each $5,000, by the will of Mrs. Lewis Ward McAllister Lewis.

Mary Hitchcock Hospital, Hanover, N. H., $5,000; the Newton Cottage Hospital, Newton, Mass., and the Rufus S. Frost Hospital, Chelsea, Mass., each $2,500, by the will of Herbert A. Wilder.

Boston Floating Hospital, the Littleton (N. H.) Hospital, the New Hampshire Orphanage, Franklin, N. H., and the New England Deaconess Hospital, Boston, each $5,000; the Mercy Home, East Manchester, N. H., the Florence Crittenden League of Compassion, Boston, the Cottage Hospital, Woodsville, N. H., and the Winchester Home for Aged Persons, each $2,000, by the will of George Henry of Winchester.

Hopewell Sanatorium, Greenville, S. C., $1,500, by the Kiwanis Club.

Margaret Pillsbury Hospital, Concord, N. H., and the Concord District Nursing Association, each $1,000, by the will of Dr. Charles P. Bancroft.

The Ladies' Hospital, Portchester, N. Y., $1,000, by the will of Mrs. Mary E. Smith.

Mount Sinai Hospital, New York City, $1,000, by the will of Hyman Freeman.

Philadelphia Home for Incurables and the Methodist Hospital, Philadelphia, each $1,000, by the will of Mary Richards.

American Red Cross, for the relief of soldiers and sailors of the U. S. wounded in the World War, $600, by Marietta Whritenour of Brooklyn.

Boone County Hospital, Columbia, Mo., $500, by Berry McAlester.

Sturgis (Mich.) City Hospital, $250 each, by Mrs. Ada Van Vleck and F. B. Ainger.

Baldwin County, Ala., for child welfare, $200, anonymously.

New York Academy of Medicine, books on medical history and a plaster cast of himself by the late Dr. Arpad G. C. Gerster.

## LATIN AMERICA

**Personal.**—Dr. E. J. Jonquières is the director of the newly inaugurated National Radium Institute at Buenos Aires. Dr. N. Capizzano is assistant director and Dr. M. Toledo, general manager. The radium emanations service is in charge of Drs. J. C. Landaburu and H. Allocatti.

**Preventive Medicine in Venezuela.**—A new health conservation measure has been signed by President Gomez of Venezuela, requiring that immediate steps be taken to prevent in the Llanos plains malaria and ancylostomiasis. This region has been divided into three sections—eastern, western and central. The survey will be supervised by the director of national health, and all expenses will be paid by the national treasury.

## FOREIGN

**Panel Physicians Fined.**—The report of the ministry of health of England in a recent inquiry which resulted in a fine of $5,000 each imposed on two physicians, in respect of infringements of the Insurance Acts Regulations by charging fees to panel patients, came before the Lancashire Insurance Committee, Dec. 17, 1923. A resolution requesting the ministry of health to reduce the fine was lost.

**Interchange of Health Officers.**—The Society of Medical Officers of Health has undertaken to select the British representatives to take part in the 1924 interchanges of health officers organized by the Health Section of the League of Nations (THE JOURNAL, March 10, 1923, p. 706). A course in general health administration will be held in the Netherlands, April 24-May 30; in Denmark, June 1-July 14, and in Switzerland, August 10-September 20. A course in antituberculosis work is also being given in Austria, France, Hungary, Belgium, Switzerland and other European countries from February 6 to April 30. The expenses of these courses are defrayed by grants from the Rockefeller Foundation.

**Medical Hydrology.**—Under the auspices of the ministry of health and of the Spanish Society of Medical Hydrology, the Second National Congress of Medical Hydrology will be held at Madrid, March 15-20. The congress will include in its sections not only medical men, but chemists, physicists, engineers and directors of spa establishments.——The Society of Hydrology and Climatology of Nancy and the east of France was organized in October, 1923. Dr. Perrin, professor of therapeutics at the Faculty of Medicine, Nancy, was elected president.——An international institute of medical hydrology is in course of foundation in the south of Italy, with Professor Devoto as chairman. An endowment of 50,000 lire has already been raised. The institute will carry on scientific researches.

**Medical News from India.**—The Lady Reading Hospital for Women and Children is practically finished and will be ready for occupation about May. This institution will replace the Lady Dufferin Hospital, which will then be used as an infant welfare center and outpatient department. Dr. Houlton of the Women's Medical Service will be in charge of both institutions. A special feature of the work will be the systematic training of Indian women as qualified nurses. Medals will be awarded at the 1924 Baby Week in each Indian state, the condition being that the mothers must have been attending child welfare centers.——The Bengal government has issued a statement dealing with kala-azar in that province. A preventive campaign is urged in which a model kala-azar center would be opened with the cooperation of private practitioners. Three hundred medical men have received special training in the diagnosis and treatment of this disease, which is increasing; in 1911 only 1,541 cases were treated; in 1919, the number had risen to 4,290; in 1920 to 7,382; in 1921 to 11,231, and in 1922 to 18,506. It is feared there is a greater prevalence of the disease than the official figures indicate.

**Public Health Administration and Beer.**—Our German exchanges protest vigorously against the proposed reduction in the staffs of the state public health services. They say ill advised economy is proposing to throw down the barriers that have so successfully protected the country against invasion by plagues. One writer states that appropriations for the public health service in Prussia amount to only one half of 1 per cent. of the total budget, and that this supports the 500 health officers, the vaccination and other services, and various institutes. Ascher of Frankfurt has an article in the *Deutsche medizinische Wochenschrift*, entitled "Where and How Economy Is Imperative," which cites these facts. He says in conclusion: "The Quakers, according to a recent official calculation, supplied Germany with 123 thousand millions of calories between January, 1920, and September, 1922, but during the same period forty-one times this amount—5.1 million millions of calories—were consumed in Germany in the manufacture of beer. Does not this bring a blush to the cheek of every one who is not financially interested in some brewery?"

**League of Nations.**—The council of the League of Nations at its session in Paris in December, 1923, named the following medical members of the new health committee of the league to supplement those who had already been nominated by the Office international d'hygiène publique: Dr. T. Madsen (Denmark), president of the provisional health committee since 1921; Prof. Léon Bernard (France), Prof. D. Ottolenghi (Italy), Dr. J. Jitta (Holland), Dr. G. Pittaluga (Spain) and Dr. Chagas (Brazil). The members already appointed were its president, Mr. O. Velge (Belgium), Dr. Raynaud (France), Sir George S. Buchanan (Great Britain), Dr. Lutrario (Italy), Surg. Gen. Hugh S. Cumming (United States), Dr. A. Granville Pasha (Egypt), Prof. Ricardo Jorge (Portugal), Dr. H. Carrière (Switzerland) and Dr. Mimbela (Peru), an additional nomination for a medical representative of Japan being left open. The constitution of the health committee provides for only sixteen members in the first instance, but the council recommended the addition of two other nominees: Prof. B. Nocht of Hamburg and Dr. Chodzko, late minister of health at Warsaw, who will represent Germany and Poland, respectively. The committee will hold its first session under the new constitution at Geneva at the end of this month when reports of the league's commissions on quarantine measures in the Far East, on the unification of standards for therapeutic serums and of serologic tests, on the opium traffic, on standardization of "biologic" remedies, and on international comparisons of cancer mortality will be presented.

**Personal.**—Dr. K. Biehl, of the University of Vienna, will lecture, February 12, before the New York Academy of Medicine on "The Histology and Physiology of the Labyrinth."——Friends of Professor Ménétrier presented him recently with a medal, accompanied with addresses of tribute from various scientific societies and his former interns.——The king of Italy has decorated a number of French physicians in honor of the Pasteur centenary, conferring the grand cross of the Order of the Crown on Emile Roux, director of the Pasteur Institute, and on M. Paul Strauss, minister of hygiene, while Drs. Chauffard, Pottevin and Honnorat, A. Calmette, L. Martin, Borrel, Roger, Achard, Salimbeni, F. Rathery and G. Poix were made officers of the order. Drs. Vincent, F. Widal, P. Carnot, V. Bérard, and René and Pasteur Vallery-Radot were made officers of the Order of Saints Maurice and Lazarus. The list includes the officers of the Pasteur institutes at Paris and Strasbourg, the medical descendants of Pasteur and several senators. The others are nearly all professors.——The *Siglo Médico* relates that Dr. Carlos Peña, medicolegal expert at Palencia, was seriously injured recently by a bomb sent to him through the mail. It is supposed to have been sent by a relative of an insane person interned on the basis of his testimony.——A party of 120 Belgian students, including forty medical students, recently visited Paris and took part in the ceremony of tribute to Mme. Curie on the twenty-fifth anniversary of the discovery of radium.——The Academia de Medicina at Madrid has awarded the Salgado prize to Dr. Pio Arias Carvajal for his work "Tuberculosis."——The friends of Professor Bergonié are collecting a fund to present him with an engraved tablet. Dr. Laquerrière, whose address is 60 rue de Rome, Paris, is in charge of the matter.——A third operation has been performed on the hands of Maxime Menard, the radiologist of the Cochin Hospital at Paris. Dr. Soret, Havre, is also in the hospital for the same reason. His right hand has been amputated and his left is threatened. He is 70 years old. The cable reports that a campaign has been launched to raise a fund for roentgen-ray victims and erect a memorial to those who have died from injuries received in roentgen-ray research and practice.——Mrs. Clive Neville-Rolfe, secretary of the British National Council for Combating Venereal Disease, will arrive in New York, March 1, to lecture throughout the United States on social hygiene in Europe. Mrs. Rolfe was founder of the Eugenics Education Society.——Dr. William Campbell, bacteriologist of the city of Bradford, England, has accepted the Wernher Beit chair of bacteriology at the University of Capetown, South Africa, succeeding Dr. T. J. Mackie.

## CORRECTION

**Typhoid in the Large Cities of the United States.**—In the twelfth annual report published in THE JOURNAL last week, the following corrections should be made: On page 390, the rate for New Orleans should be 8.7 instead of 8.8; in the last item in Table 10, typhoid deaths should be 851, and typhoid death rate 3.11.

# Government Services

### Public Health Service Begins Epidemiologic Survey of Colds

The Research Division of the U. S. Public Health Service is now engaged in an epidemiologic study of colds and other minor respiratory affections. Morbidity reports from about 12,000 persons are being collected by Dr. J. G. Townsend, who is in charge. Students of several colleges have been circularized with enrolment blanks asking specific information with reference to their respiratory ailments, including asthma, tuberculosis, hay-fever, obstruction of nostrils and similar data. This began in October and will be continued three years. Each student who volunteers to enroll is sent a semimonthly clinical report form, on which he is requested to show whether, during that period, he has had any respiratory affection. The colleges which are regularly reporting are:

| | Students Reporting |
|---|---|
| Johns Hopkins University, Baltimore | 650 |
| Howard University, Washington, D. C. | 1,700 |
| Georgetown University, Washington, D. C. | 500 |
| Ohio State University, Columbus | 1,800 |
| University of Chicago, Chicago | 900 |
| University of California, Berkeley | 4,000 |
| Tulane University, New Orleans | 1,000 |

Similar reports are being collected from heads of families of the medical corps of the army, navy, public health service, and the faculties of various colleges. The purpose of these latter reports is to make comparisons on the "common cold" ailment in families as compared to the individual reports which come from students. At the present time reports are being received from aproximately 500 families.

This work of the Public Health Service is extensive and ultimately reports will be received from 20,000 persons. Each person gives a medical history with particular reference to pneumonia and influenza; he is asked how much exercise he takes daily, the type of underwear worn at different seasons, and the quantity of fresh air he permits in his bedroom. In his bimonthly report, he is asked to describe any cases of the following which might have affected him since his last report: colds, including "cold in the head" or "nose cold," bronchitis, influenza, sore throat and pneumonia. In the family reports similar information is requested, except that special questions are asked to determine progress of the disease among the members of the family. It is hoped from these data to observe the occurrence and nonoccurrence of colds and influenza in various parts of the United States and to compare this incidence, to study the symptoms as presented, and to observe relations, if any, between the "common cold" and the interepidemic phases of influenza.

### Classification Board Fixes Salaries for Government Nurses

No official report has been made to Congress by the Personnel Classification Board, which is required by law to fix the grades and salaries of government employees. It has been rumored that nurses in the government service will be placed in the subprofessional group, and many complaints and protests from nurses have come to congressmen and to members of the Classification Board against such action. It was feared that placing nurses in the subprofessional class would reduce their salaries in many instances, but it is known, that although the Classification Board has decided to place nurses of the government service in the subprofessional class, it has placed them in groups in such a way as to maintain present salary standards and in some instances to increase them. The board has allocated nurses as follows: superintendent of nurses, chief nurse, assistant chief nurse, head nurse and nurse. Under a general letter, addressed to the heads of departments of the government (circular No. 13), the Classification Board fixes the following as the minimum and maximum salaries of the groups into which government nurses are allocated:

| | Minimum | Maximum |
|---|---|---|
| Superintendent of nurses | $2,400 | $3,000 |
| Chief nurse | 2,100 | 2,700 |
| Assistant chief nurse | 1,860 | 2,400 |
| Head nurse | 1,680 | 2,040 |
| Nurse | 1,500 | 1,860 |

### Trachoma Hospital for Veterans

A sixty-bed trachoma hospital will be erected by the U. S. Veterans' Bureau at Pikeville, Ky., according to reports. Bids will be mailed about February 9. The plan also includes a laboratory for research in trachoma.

# Foreign Letters

## LONDON

*(From Our Regular Correspondent,*

Jan. 14, 1924.

### The Panel Physician's Fee

At the resumed sitting of the court of inquiry appointed by the ministry of health to consider the remuneration to be paid to panel physicians, evidence was given on behalf of the friendly societies. Mr. E. Harrison (of the Northumberland Miners' Permanent Approved Society) stated that the present medical service was satisfactory, and equaled that given by the general practitioner to the same people before the passing of the Insurance Act. But certification was far from satisfactory. This arose from failure of the physicians to give absolutely true certificates. But these were not given with the intention to mislead the societies. The general cost of contract practice before the passing of the Insurance Act was a capitation fee of $1, including drugs. At this figure, contract practice was eagerly sought after by the physicians, owing to the security of payment and the private practice associated with it. A system of family contract practice had existed for a long time in the colliery villages of Northumberland and Durham. Before the war, the fee for this was 18 cents for each fortnight; it was now 24 cents. This included drugs, and gave a yearly average of $2 for each person (i. e., an average family of four, less one covered by the Insurance Act). The general rates in town areas prior to the war for each attendance and for medicine were 24 cents at the office and 50 cents for home treatment. After deduction of the cost of collection and bad debts, the net amount received by the physicians was probably not more than 75 per cent. of these figures. The corresponding figures now appeared to be 50 and 75 cents, respectively, but families just above the medical benefit level were paying $1 for home treatment. The inception of the insurance service gave a substantial advantage to the physicians. They obtained a capitation fee of $1.75, but experience showed that a much smaller one would have been adequate. His opinion was that a panel physician with 1,500 patients at $1.75 a head would make a gross income from all sources of $8,000 and a net income of $6,000.

The case of the National Union Association of Trade Union Approved Societies was put forward. It stated that if the average rendered by the panel physician represented three and one-half services a year for each insured person, then the amount now paid would be at least equivalent to the cash received by a physician whose practice was conducted on the charge of 75 cents a visit to the patient's house and 50 cents for each attendance at the office, after allowing for bad debts and the collection of debts, the cost of medicine and dispensing. The association did not agree that the fee should be sufficient to attract the higher skilled practitioner, unless the insured population was guaranteed the higher skill.

### Efforts of the National Adoption Society to Secure Legislation

The National Adoption Society, which has for its motto, "The Homeless Child for the Childless Home," has done excellent work in this previously neglected field for nearly thirty years. It sifts the applications from would-be adopters, and satisfies itself that the home offered is suitable and that the adopting parents are in such circumstances as to enable them to give the child a proper start in life. Great care is taken to accept as suitable for adoption only those children that have no chance of being properly brought up in their present surroundings. The general class of child accepted is the homeless orphan, semiorphan and first illegitimate child. The council of the society consists of a number of

well known philanthropic women, clergy and physicians. The one thing considered in arranging an adoption is the ultimate benefit of the child. The need for this work is shown by the fact that hundreds of thousands of children are born in England who are without homes, and who in great numbers must be brought up in institutions unless other provision is made. The society holds that children suffer more from loneliness than any other deprivation, and that this produces sullenness, stubbornness and waywardness, and leads to a resentment that often produces the young criminal and outcast. Children without a name must have this handicap counterbalanced by circumstances. The right environment will form the child's character to withstand temptation to melancholia and depression, and that desperate carelessness which often follows the knowledge of his birth. This state of mind is the incentive that drives him into a life of sin, which is supposed to be the result of heredity, but is really due to lack of corrective environment. The criticism has been made that the society separates the child from its mother. But experience shows that the mothers are most grateful for what has been done for the children. The deep sacrifice of parting from the child which every normal mother feels, is an important influence for good on a woman who has erred morally and spiritually. The fact that her sacrifice leads to permanent happiness for the child is more conducive to lasting regeneration of the mother than is the alternative hardship that she experiences in keeping her child, and which, even with sympathy and help from friends, can never lead to anything but a sad and unsatisfactory life for both. Moreover, if mother and child are helped to face the fact of the illegitimacy openly, the moral fabric of society is threatened. The society admits the need of the many splendid children's institutions in the country for which there will always be children who are unsuitable for adoption, owing to age or heredity, but maintains that the natural home environment should be given whenever possible to the normal child. The boarding out with foster mothers of children born out of wedlock not only divides the love of the child between its own and its foster mother, but unsettles the child's normal instinct, its home life, thus tending to create a disintegrating influence.

The society has found more strenuous propaganda necessary; many more children are offered than can be placed in suitable homes. This difficulty is not encountered in America, as adoption is legal there and public opinion is being converted. Alone among the English-speaking countries and among most of the civilized nations, England has no adoption laws. The society therefore intends to press for legislation to replace haphazard custom. Although by its system of careful inquiry the society can safeguard the children who come under its care from untoward circumstances, it holds that it is essential that the adopted child should be recognized by the state and given a legal status. Further, many cases of adoption take place outside the society's safeguards and without supervision. These often lead to tragic and even criminal practices. One of the greatest evils connected with the unwanted child is baby farming for profit under the specious guise of affectionate foster parentage. Blackmail and neglect are among the results. In its annual report, just published, the society gives these figures: adoptions completed, 169; applications from adopters, 343; applications offering children, 863.

### Life Assurance and Health Welfare Work

The Wesleyan and General Assurance Society has made a new departure in life assurance in this country. It has opened a health service bureau to carry out a definite and extensive program of general welfare work. This will include the preparation and distribution of literature bearing on personal and civic hygiene, the rudiments of health and the prevention of disease. Machinery will be set up for the study of mortality and morbidity statistics, and periodic health surveys will be made. It is noteworthy that this society is mutual, has no shareholders and pays no dividends. In its work it has the example of the Metropolitan Life Association of New York, which has found that the cost of a health service bureau is quickly recovered in the improved fitness and longer life of its members.

### Education in the Control of Cancer

A committee of the Royal Society of Medicine has supplied the British Red Cross Society with information suitable for the education of the public with regard to cancer. It is in the form of a leaflet:

WHAT OUGHT TO BE KNOWN ABOUT CANCER

1. In England and Wales, 45,000 people died in the year 1921 from cancer.

2. There is every reason to believe that many of the patients could have been cured if the disease had been discovered early, and the right treatment adopted.

3. Treatment by drugs, taken by the mouth or applied externally, at present offers no prospect of cure.

4. In its earliest stages, cancer is confined to one spot and rarely gives rise to pain or a feeling of ill health; nevertheless, there is usually evidence that there is something amiss, for example: (*a*) a lump in an unusual situation; (*b*) bleeding or discharge from unwonted parts of the body. This early stage is the favorable one for the immediate treatment of cancer.

5. If a lump is found in the breast of a woman, medical opinion should at once be sought. Many such lumps are cancer.

6. Cancer of the womb may occur at any age over 25, but most frequently between the ages of 40 and 60. It causes bleeding and discharge, and is rarely painful in its early stages.

7. Any bleeding from the womb, however slight, after the change of life, almost always means cancer.

8. When any irregular bleeding or blood-stained discharge occurs at the change of life, a physician should be consulted. Often it means that cancer is present.

9. For any abdominal enlargement within the abdomen, the physician should be consulted, because such enlargement, apart from pregnancy, may be due to tumors which, though usually simple, are sometimes cancerous.

10. Any wart or sore occurring on the lip, especially in men over 40, is likely to be cancer. Early removal means cure; neglect spells death.

11. An unhealed sore or lump on the tongue, especially in men, should be regarded with suspicion. Many of these are cancers.

12. Irritation of the tongue, or inside of the cheek, by broken or jagged teeth or tooth plates, must be avoided. The lower lip is often irritated by smoking a pipe with a rough or hot stem. This irritation may end in cancer.

13. Sores, cracks, ulcers or lacerations which refuse to heal, and moles which tend to spread, all demand careful medical investigation. Such troubles are often the starting points of cancerous growths, and their treatment by salves or ointments is only waste of time.

14. Persistent indigestion, obstinate constipation, or bleeding from the bowel commencing in middle life, always demands investigation.

15. Frequently the patient thinks bleeding from the bowel is due to piles, but too often the real cause is cancer of the rectum.

## PARIS

*(From Our Regular Correspondent)*

Jan. 11, 1924.

### Physicians as Represented on the Stage

If it is true that the general public often gets wrong ideas of medicine and physicians, it can scarcely be said that the plays which are produced at present in Paris theaters contribute much toward a better understanding, but rather the contrary. Take, for example, René Maillard's recent play, "Morphine Addicts," which makes some pretentions of inculcating moral principles. According to a public announcement issued by the theater in which it is being played, "The author has endeavored to show the terrible physical and moral decay that surely awaits the unfortunate drug addict who pretends to seek in his favorite drug, whether morphin, cocain, ether, opium or other toxic agent, the taste of rare sensations and even the secret of an ideal life. In order to make the play more striking, the author has laid bare certain scenes of picturesque realism which give the play a weird

effect and interest without detracting in the slightest from its unquestionably moral tone." Admitting that there may be considerable truth in some of these utterances, Maillard does not seem to have been able to imagine anything better than a plot in which the main rôle is played by a physician who, in order to get possession of the woman he loves, causes her husband to become a morphin addict in the hope that he may disappear from the scene, a victim of his addiction. If the public should be inclined to generalize, it will be seen that the play would not create a good opinion of physicians.

Then, in another play, from the pen of a talented writer, Jules Romains, which is entitled, "Knock, or the Triumph of Medicine," we learn of an old physician in a small town who disposes of his practice to Dr. Knock, an ultramodern physician, who chose as the main theme of his inaugural thesis these words: "Persons who consider themselves well are patients ignorant of their condition." The result, in this backward region where the people had been living in ignorance of modern medicine and where his predecessor had had very few clients, is that Knock goes systematically to work to awaken among the people a respect for medicine in general and a recognition of the need of every person taking good care of his health. So far, everything was all right; but let us inquire into the methods that Knock employed. After his arrival on the scene, he spent a whole month collecting information in regard to the financial status and the income of the inhabitants. When he came to prescribe treatment he was careful to proportion it, not according to the disease, which was often purely imaginary, but according to the patient's wealth and ability to pay. Thus it was that "medicine triumphed"; that the pharmacist was busy night and day, and that the wretched tavern of the town was transformed into a sort of sanatorium, provided with modern equipment. When this point was reached, as one dramatic critic writes, medicine became a veritable religion of which the modern physician was the high priest, and it was with just pride that the physician saw in every home a night-lamp burning every evening at the bedside of every patient, for they seemed to him like altars erected in his honor.

Referring to these two plays and to certain recent novels in which our profession is also held up to ridicule, Dr. G. Duchesne, secretary of the editorial staff of the *Concours médical*, expresses the hope that their authors, when the day comes on which they shall be compelled to ask medical aid, may fall into the hands of a colleague who, while not hesitating to remind them of the affronts—more or less veiled, it is true—that they have heaped on our profession, will, nevertheless, return good for evil and thus cause them to recognize the real triumph of medicine, which may possibly be the means of saving their lives.

### Public Health Measures Adopted Following Floods

While not attaining the same gravity as in 1910, the floods this year due to the overflow of the Seine have, nevertheless, assumed considerable proportions in the vicinity of Paris. M. Paul Strauss, minister of hygiene, public assistance and social welfare, has addressed to the prefects of the departments a circular letter concerning measures to be taken following floods. The water of fountains and springs must not be used until it has been subjected to boiling or purification. Wells and reservoirs must be cleaned and disinfected (potassium permanganate, in the proportion of 500 gm. per cubic meter of water to be disinfected). Water pipes should be examined and, in case of contamination by infiltration, should be put in shape and carefully cleaned and flushed. The use of raw vegetables should be discontinued, for the time. Foodstuffs that have been exposed to contamination should not be consumed unless cooked. Houses and their appurtenances should be cleansed of all mud and dirt. This will be facilitated by the addition of plaster or lime to dry them up. Mud, dirt and refuse should be removed to a sufficient distance from wells, springs, reservoirs and water pipes to obviate any risk of contamination. Mud and dirt should be disinfected by mixing them thoroughly with quicklime, about 5 kg. per cubic meter being employed. The soil about dwellings should be disinfected either by sprinkling with slacked lime about buildings, or, in the case of lawns and grass plots, they may be flushed with water to which an antiseptic has been added. The same precautions should be taken to put cellars and basements in a sanitary condition. Contaminated straw mattresses should be burned, and other articles of bedding should be cleaned and disinfected. Schools, workshops, factories and stores must not be reoccupied until these disinfection measures have been carried out.

The minister of public health has visited the lodging centers in the vicinity of Paris in quest of victims of the floods. He ordered that medical visits be paid to all these places. The three societies of the French Red Cross complied with his request that crews of nurses be sent to each of these centers, in order that, more particularly, the sick, the convalescent, and mothers and children, may be well taken care of.

### Malta Fever in the Environs of Paris

Malta fever, which is prevalent in an endemo-epidemic form in the department of Gard, Hérault, Savoy, the Dauphiné, the Cévennes, and elsewhere, resulting in some instances in numerous cases, has given rise to a case in the department of the Seine, which has been confirmed by a bacteriologic examination. A girl, aged 10, residing at Pantin and sent to the Saint Louis Hospital, is the person affected. This girl had drunk some goat's milk procured from the owner of a herd that had been driven from the southern part of France. Examination of the blood serum of thirty-seven goats of the herd revealed the fact that in seven it agglutinated *Micrococcus melitensis*. These findings caused the prefect of police to prohibit the migrations of the herd and also the sale of the milk until after it had been boiled.

At the request of the Academy of Medicine, the minister of public health has made Malta fever a notifiable disease when occurring in man. But it would be more efficacious to eliminate the herds of goats that are still driven about the streets of Paris. Before the war, there were about a thousand goats to be found in the region of Paris, the consumption of goat's milk having come into favor owing to the erroneous, though widespread, view that goats are never tuberculous.

### Mental Affections and Recruiting

At a recent meeting of the Société de médecine militaire française, Chavigny (chief physician of Strasbourg, ranking as colonel) emphasized the desirability of taking more careful account than had been done in the past of possible mental affections in selecting recruits for the army. He stated that it would be well to call the attention of examining physicians to the fact that mental affections are especially frequent in those who volunteer for service; these should be studied with care, not only at the recruiting office and during the final inspection before they are called to the colors, but also during the first weeks of service.

Furthermore, in the instructions on physical aptitude, such as are issued now to examiners, the nomenclature of various affections of a psychiatric character contain many archaic terms; they are open also to the objection of being intercalated with the nomenclature of bodily diseases with which they have no relation. For example, stammering and mutism are listed under the head of lesions of the tongue, whereas no one at present will hesitate to admit that, in both these cases, accidents of central origin are involved, the study of which belongs to psychiatry.

## BUCHAREST

*(From Our Regular Correspondent)*

Jan. 8, 1924.

### Physical Deterioration of Adolescents

The bad nutrition of children during the war is now reflected in the physical defects of young adults who, during the war, were at the period of life that is most important in the physical development of the body; that is, the ages from 14 to 20. Surgeon Colonel Vasilescu, president of the recruiting board, in his report throws an unpleasant light on the unsatisfactory physique of the Roumanian middle classes, from which the army is mainly recruited. Of the men who presented themselves for enlistment in the last year, 13,129, or more than 31 per cent., were rejected after medical inspection as physically unfit. In addition to those rejected by the medical officers, more than 12,000 were refused by recruiting officers in the nine months ending Sept. 30, 1923. In many districts, the rejections on account of general bodily weakness were heavy. In other districts, many men were rejected on account of defective teeth. In commenting on the figures, Dr. Vasilescu says: "The question of medical rejections is of great importance, and requires serious consideration in view of the large number of recruits that must annually be obtained. It may be that the next generation of lads, grown up since the war, will be recruits of better physical development. At any rate, it is a regrettable sign of the present that such a large number of lads fail, for various reasons, to attain the standard required for entrance into the army, a standard that cannot be considered exacting." To say that the standard is not exacting is to put the case mildly. Low as the standard is, the authorities encourage the medical officers not to be too strict in their requirements. A case was lately described in a medical journal of a too conscientious examiner of recruits being reprimanded for excess of zeal, and it is said among military physicians that two years ago a hint was given to all medical officers engaged in the work not to be too strict in the examinations.

### Fashion in the Treatment of Syphilis

In a recent address at the Medical Society of Cluj, Dr. Veress, lecturer on dermatology and venerology, said that there are certain fashions in the treatment of syphilis. He has found the use of bismuth preparations and mercurial oil of great service. These act as promptly as any other medicaments, and are much less troublesome to administer. Dr. Veress has not seen many cases of salivation, although other authors have emphasized the frequency of stomatitis with the use of bismuth preparations. He considers it important, however, not to make light of syphilis to the patient, as otherwise there is a tendency to neglect the general health, which may encourage the development of the tertiary symptoms of the disease. As is generally recognized, these are the most important features of the disease, and must always be considered in every case. If small doses of mercury combined with copious administration of neo-arsphenamin are continued for at least two years after syphilitic infection, patients are prone to take better care of their general health, and it is a matter of common conviction that it is in patients who neglect this feature of the care of their disease that the organic nervous disease develops. Symptoms must be treated as they occur, and, during the course of the treatment, control by reliable Wassermann tests is important.

### Seaside Sanatoriums for Surgical Tuberculosis

The public welfare ministry has long had under consideration the establishment of a seaside sanatorium by the state for the cure of surgical tuberculosis of children. The government, however, for financial reasons, did not appropriate the necessary sums, although convinced of the necessity of such an institution. The Society of Roumanian Charitable Women has taken the matter in hand and is trying to collect voluntary contributions and to arrange entertainments to provide the funds. The medical societies are also taking part in the propaganda work. In the Bucharest Medical Society, Dr. Avramescu spoke about the importance of seaside sanatoriums. He said that there are now many sanatoriums for children along the seashore in various countries for the treatment of tuberculosis. Contrary to experience with adults, salt air and sea bathing seem to be the best possible treatment for scrofulous conditions in children. The application of this principle to surgical tuberculosis, however, is still very incomplete. An English surgeon said not long ago that the surgical treatment of tuberculosis is scarcely justified in large city hospitals. In orthopedic hospitals, the necessity for fresh air and sunshine is well understood, and children are sent to country homes during the summer and come back wonderfully improved. The French and Americans have demonstrated that surgical tuberculosis patients do extremely well in seaside sanatoriums.

### Measles on a Steamer

A Mediterranean steamer, which sailed from Greece to Galatz, had on board several cases of measles. The patients were placed in a temporary hospital, where they will be detained with their parents and friends. Several patients with trachoma were on board the same steamer; they will be returned to Greece.

## BERLIN

*(From Our Regular Correspondent)*

Jan. 12, 1924.

### Physicians and the Health Insurance Societies

Tomorrow the council of the Leipzig League will take a stand on the agreement proposed, January 4, in the ministry of labor (THE JOURNAL, Feb. 2, 1924, p. 406). Presumably it will approve the attitude of its representatives at the previous conference and then will adopt measures to restore relations between physicians and the health insurance societies. The *Krankenkassen* have found only eight physicians in Berlin who are willing to treat members of the health insurance societies for a specified salary. The continued attempts of the *Krankenkassen* to secure more physicians through advertisements in the press will doubtless be unsuccessful. It cannot be denied, however, that the financial embarrassment of many practitioners has been increased by the conflict with the health insurance societies.

### Separate Tables for Physicians

An appeal has appeared over the signatures of Professors Bier, Bumm, His and others as follows:

> The mental workers of Germany are suffering acutely from the general financial depression, and physicians are especially affected. An exceedingly large number of people are not in a financial position which permits them to employ a physician. The resulting disruption of medical practice has brought distress to thousands of physicians and they have been compelled to seek other means of support. The embarrassment and the stress of such circumstances have driven a number to take their own lives. The sad plight of physicians can be alleviated to some extent if in the newly created community kitchens of Berlin separate tables are established at which physicians can procure meals for a small sum, or, in dire cases, for nothing. Funds must be raised to procure food and to operate these kitchens. We consequently address an appeal to all persons who are indebted to the medical profession for past benefits to contribute to safeguard the men who are needed to preserve the health of the people.

### Vital Statistics

The birth rate for Berlin during July, August and September, 1923, was the lowest on record in Germany. The total number of births was only 8,715. The highest birth rate for this period was in the Rhine-Westphalian industrial region, where 17,021 births are reported.

The mortality was low, in the main, doubtless partly because of the decline in the birth rate. This is indicated by the fact that the mortality rate in the Rhine-Westphalian

district declined the least, while the birth rate in that region was the highest.

Taking the larger cities as a group, the excess of births over deaths was not as great as in the preceding quarter. In all cities except seaports, where the rate was stationary, there was a decrease in the excess of births over deaths. The following table is a summary of births, deaths and marriages in large cities in different sections of Germany:

*Vital Statistics of Large Cities of Germany, July-September, 1923*

| Region | Marriages | Living Births | Deaths | Excess of Births Over Deaths | Deaths from Tuberculosis |
|---|---|---|---|---|---|
| Berlin | 10,379 | 8,715 | 10,286 | —1,571 | 1,350 |
| Rhine-Westphalian industrial center | 10,914 | 17,021 | 10,617 | 6,404 | 1,491 |
| Seaports | 6,654 | 8,335 | 6,351 | 1,984 | 864 |
| Remaining North German large cities | 4,905 | 6,813 | 5,453 | 1,360 | 715 |
| Saxon industrial center | 4,351 | 5,653 | 4,586 | 1,067 | 662 |
| Rhine-Main industrial center | 2,857 | 3,085 | 2,357 | 728 | 340 |
| Remaining South German large cities | 4,645 | 5,667 | 4,629 | 1,038 | 689 |
| Totals for large cities | 44,705 | 55,289 | 44,279 | 11,010 | 6,111 |
| *Per Thousand Inhabitants and Per Year* | | | | | |
| Berlin | 10.3 | 8.7 | 10.2 | —1.5 | 1.34 |
| Rhine-Westphalian industrial center | 11.3 | 17.6 | 11.0 | 6.6 | 1.55 |
| Seaports | 11.1 | 13.8 | 10.5 | 3.3 | 1.44 |
| Remaining North German large cities | 10.2 | 14.2 | 11.3 | 2.9 | 1.49 |
| Saxon industrial center | 10.1 | 13.1 | 10.6 | 2.5 | 1.53 |
| Rhine-Main industrial center | 11.0 | 11.9 | 9.1 | 2.3 | 1.31 |
| Remaining South German large cities | 10.9 | 13.3 | 10.8 | 2.5 | 1.61 |
| Rate for large cities | 10.7 | 13.3 | 10.6 | 2.7 | 1.47 |

### Disinfection of Tuberculous Sputum

On the basis of experiments by the public health bureau, the ministry of public welfare has recommended chloramin for the disinfection of tuberculous sputum. The technical product may also be used if it is soluble in water, with only a slight residue. The 5 per cent. solutions may be prepared simply by adding 5 gm. of chloramin to 100 c.c. of tap water and shaking until dissolved. If protected from light, they remain stable for a week. When the chloramin solution has been added to tuberculous sputum, the mixture must not stand in the sunlight. Now that inexpensive agents are available, the more expensive mercuric chlorid can be dispensed with for the disinfection of tuberculous sputum.

## Marriages

WILLIAM ARDEN FATE, Hawthorne, Calif., to Dr. Margaret Josephine Wilson of San Francisco, at Los Angeles, January 15.

MICHAEL MALLET STEVENS, Woburn, Mass., to Mrs. Elizabeth Christine Farquhar of Peabody, Dec. 15, 1923.

BERNARD LEONIDAS SHACKLEFORD, Atlanta, Ga., to Miss Winnifred Madden of Concord, Ga., Dec. 25, 1923.

ALONZO H. MYERS to Miss Eleanor Grace Gurney, both of Charlotte, N. C., at New York City, Dec. 17, 1923.

VERNON JAMES HITTNER, Seymour, Wis., to Miss Catherine Brennan of La Salle, Ill., at Chicago, January 3.

HARRY R. IRISH, Forest City, Iowa, to Miss Bertha O. Pettey of Rochester, Minn., recently.

RUSSELL B. KILPATRICK to Mrs. Alice R. Carpenter, both of Memphis, Tenn., January 17.

SHERMAN E. SIMMONS to Miss Grace Tingsbury, both of Norwalk, Ohio, recently.

WILLIAM JAMES HURLEY to Miss Frances Anna Kreuz, both of Chicago, January 23.

## Deaths

**Lewis Samuel McMurtry** ✠ Louisville, Ky.; died suddenly at his home, February 1, of pneumonia. Dr. McMurtry was born in Harrodsburg, Ky., in 1850. He received his Bachelor Degree from Center College, Danville, Ky., in 1870, and three years later graduated from Tulane University of Louisiana School of Medicine, New Orleans. He was an intern at the New Orleans Charity Hospital. Dr. McMurtry, at the time of his death was president emeritus of the faculty, and professor of abdominal surgery and gynecology at the University of Louisville Medical Department, surgeon to the Louisville City Hospital, and president of the Kentucky State Board of Health. He was a trustee of the American Medical Association, 1883-1889 and 1893-1896, and president, 1905-1906. He also represented the American Medical Association at the Sixteenth International Medical Congress, Budapest, Hungary, in 1919. He had been president of the Kentucky State Medical Association, the Southern Surgical and Gynecological Association and the American Association of Obstetricians and Gynecologists. He was a fellow of the British Gynecological Society and the Obstetrical Society of Edinburgh, Scotland; a member of the American Gynecological Association, and the American Surgical Association. Among many other publications, Dr. McMurtry contributed chapters to the *International Text Book of Surgery* and to *Reed's Text Book of Gynecology*. In his death the Association loses a Fellow who, for many years, was conspicuous in its counsels. Dr. McMurtry was a leading figure in the advancement of his specialty and in promoting good fellowship in the profession.

**Edward Lawrence Keyes,** New York; Medical Department of the University of the City of New York, 1866; died, January 24, of pneumonia. Dr. Keyes was born at Charleston, S. C., in 1843, and received a Bachelor's Degree from Yale University, New Haven, Conn., 1863. He was formerly professor of dermatology at the Woman's Medical College of the New York Infirmary for Women and Children, and for many years instructor in surgery, assistant demonstrator of anatomy, lecturer of dermatology and adjunct professor of surgery at Bellevue Hospital Medical College, New York. Dr. Keyes was founder and first president of the American Association of Genito-Urinary Surgery, a member of the Medical Society of the State of New York, the International Dermatological Society and the Association Française d'urologie; on the staffs of the Bellevue and St. Elizabeth's hospitals, New York, and the St. Joseph's Hospital, Yonkers. He was the author of "Tonic Treatment of Syphilis," "Venereal Diseases," "Surgery of the Kidneys," and other works. During the World War he aided materially in the prevention and control of venereal disease among American troops.

**Ernst Saurenhaus** ✠ Chicago; University of Heidelberg, Germany, 1887; at one time professor of obstetrics at the Bennett Medical College, Chicago, and the University of Illinois College of Medicine, Chicago, and professor of gynecology at the Chicago College of Medicine and Surgery; formerly on the staffs of the Grant, St. Elizabeth's, St. Mary's, St. Anthony's and Mary Thompson hospitals; aged 64; died suddenly, February 1, of heart disease.

**Charles Wuest,** Brooklyn; Medical Department of Columbia College, New York, 1887; member of the Medical Society of the State of New York; instructor in medicolegal pathology at the Long Island College Hospital, Brooklyn; served as coroner for twenty-five years; formerly on the staffs of the Bellevue Hospital, New York City, the Wyckoff Heights and St. Catharine's hospitals, Brooklyn; aged 60; died suddenly, January 28, of heart disease.

**Charles B. Dirks** ✠ Los Angeles; Rush Medical College, Chicago, 1903; professor of clinical neurology at the College of Medical Evangelists, Los Angeles; formerly assistant superintendent of the Elgin (Ill.) State Hospital; on the staffs of the Los Angeles County General Hospital and the Glendale (Calif.) Hospital, where he died, January 19, following an operation, aged 46.

**Benjamin Murray Hypes** ✠ St. Louis; St. Louis Medical College, 1872; a founder of the Marion Sims College of Medicine, St. Louis; professor of obstetrics at the St. Louis University School of Medicine since 1890; past president of the St. Louis Medical Society, and the St. Louis Dental Society; formerly on the staff of the City Hospital; aged 77; died, January 15, of heart disease.

**Henry Dorrace Beyea,** Ware Neck, Va.; University of Pennsylvania School of Medicine, Philadelphia, 1891; for-

merly associate professor of gynecology and assistant demonstrator of obstetrics at his alma mater, and on the staffs of the Gynecean, the University and the Presbyterian hospitals, Philadelphia; aged 56; died suddenly, January 18, of cerebral hemorrhage.

**William Henry Klapp,** St. Davids, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1876; formerly treasurer of the Central Commission of the University of Pennsylvania; member of the American Philosophical Association, the Historical Society of Pennsylvania and the Academy of Fine Arts; aged 74; died, January 15.

**Henry Clay Gemmill,** Hartford, Conn.; Rush Medical College, Chicago, 1896; formerly demonstrator of histology at the Indiana Medical College, Indianapolis; veteran of the Spanish-American and World wars; formerly surgeon in the U. S. Public Health Service and the Veterans' Bureau; aged 49; died suddenly, January 10, of angina pectoris.

**Charles Guy Swan,** Columbus, Ohio; Cleveland University of Medicine and Surgery, 1897; served in the M. C., U. S. Army, during the World War; formerly on the staffs of the University Hospital, Columbus, and the Ohio Soldiers' and Sailors' Orphans' Home, Xenia; aged 53; died, January 16, at St. Petersburg, Fla., of heart disease.

**John Langley Fryer,** Hot Springs, S. D.; Kansas City (Mo.) Medical College, 1890; member of the Kansas Medical Society; formerly governor of the Battle Mountain Sanatorium, Hot Springs, and on the staff of the National Military Home (Kan.) for Disabled Volunteer Soldiers; aged 57; died, January 16.

**Timothy John Flynn,** Jamaica, N. Y.; Medical Department of the University of the City of New York, 1891; for twelve years served as coroner's physician in New York City; on the staffs of the Mary Immaculate and Jamaica hospitals; aged 57; died, January 19, of arteriosclerosis and cerebral hemorrhage.

**Charles Kirk Clarke,** Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1878; professor of psychiatry and at one time dean at his alma mater; member of the American Psychiatric Association; formerly superintendent of the Toronto General Hospital; aged 66; died, January 20.

**James K. Pollock,** New Castle, Pa.; Miami Medical College, Cincinnati, 1873; formerly a druggist; member of the Medical Society of the State of Pennsylvania; served as county coroner for sixteen years and for nine years as city physician; aged 78; died suddenly, January 2, of heart disease.

**George Arthur Boyle** ✠ Enid, Okla.; Jefferson Medical College of Philadelphia, 1887; past president of the Oklahoma State Medical Association, and the Garfield County Medical Society; founder of the Enid Springs Sanitarium and Hospital; aged 66; died, Dec. 31, 1923.

**Augustine Thomas Kingston,** New York; Georgetown University School of Medicine, Washington, D. C., 1902; formerly on the staffs of the Fordham and Memorial hospitals; aged 50; died, January 16, of a skull fracture received when thrown from a truck.

**Harry Stark Fincke** ✠ Long Island City, N. Y.; Cornell University Medical College, New York, 1903; formerly a druggist; served in the M. C., U. S. Army, during the World War; on the staff of St. John's Hospital; aged 55; died, January 21.

**George Elgin Prewitt,** Wellsville, Mo.; St. Louis (Mo.) College of Physicians and Surgeons, 1889; member of the Missouri State Medical Association; county health officer and coroner; aged 60; died, January 11, of heart disease.

**Henry C. Maynard,** Hartford, Mich.; Eclectic Medical Institute, Cincinnati, 1872; formerly member of the board of medical examiners, board of education and health officer; aged 83; died, January 10, of cerebral hemorrhage.

**Lee Davis Applewhite,** East St. Louis, Ill.; St. Louis (Mo.) College of Physicians and Surgeons, 1898; member of the Illinois State Medical Society; aged 50; died, January 15, of heart disease, while attending a patient.

**Charles Ludlow Ogden,** Cambridge, Mass.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1894; aged 56; died recently, at St. Luke's Hospital, New York, of asthma, and cirrhosis of the liver.

**John M. Hunt,** Wellington, Kan.; St. Louis (Mo.) Medical College, 1878; past president of the Sumner County Medical Society; Civil War veteran; formerly city health officer; aged 84; died, January 11, of senility.

**Samuel Ingelby Harrison,** San Francisco; Rush Medical College, Chicago, 1887; member of the California Medical Association; aged 65; died, January 6, of aortic insufficiency.

**James Glen Allan,** Lockport, Nova Scotia, Canada; Medical Department of Columbia College, New York, 1880; for nearly forty years a practitioner in Brooklyn, N. Y.; aged 71; died, recently, of cerebral hemorrhage.

**Harry D. McQuade,** Kansas City, Mo.; College of Physicians and Surgeons, Medical Department Kansas City University, Kansas City, Kan., 1897; aged 67; died, January 9, of pneumonia.

**James A. Watson,** Washington, D. C.; Georgetown University School of Medicine, Washington, 1890; member of the Medical Society of the District of Columbia; aged 67; died, January 11.

**David W. W. Follweiler,** Lynnport, Pa.; Bellevue Hospital Medical College, New York, 1870; formerly member of the school board; aged 82; died suddenly, January 5, of cerebral hemorrhage.

**George L. Chapman,** Milledgeville, Ga.; Atlanta (Ga.) Medical College, 1897; formerly served as county physician and health commissioner; aged 48; died, Dec. 26, 1923, of pneumonia.

**James C. Bennett,** Eskridge, Kan.; Kansas Medical College, Topeka, 1904; member of the Kansas Medical Society; aged 44; died, January 5, of injuries received in an automobile accident.

**Brace Wheelock Loomis,** Syracuse, N. Y.; Syracuse University College of Medicine, 1876; on the staff of the Syracuse Memorial Hospital; aged 73; died, January 10, of senility.

**John Orville Hooper,** Saluda, N. C.; University of Nashville (Tenn.) Medical Department, 1908; formerly city commissioner; aged 42; died, January 5, of pneumonia.

**Peter Onontiyoh,** Plainwell, Mich.; University of Buffalo (N. Y.) Department of Medicine, 1886; a Canadian Mohawk Indian; aged 64; died suddenly, January 18.

**William Robert Davidson,** Madison, Ind.; Bellevue Hospital Medical College, New York, 1867; Civil War veteran; aged 80; died, January 12, of senility.

**Henry Carville Cotton,** Prescott, Wis.; Albany (N. Y.) Medical College, 1863; Civil War veteran; aged 83; died, January 5, of chronic myocarditis.

**William Barnett Allgood,** Allgood, Ala.; Southern Medical College, Atlanta, 1878; Civil War veteran; aged 82; died suddenly, January 6, of senility.

**Arthur Pancake** ✠ Springfield, Ohio; Medical College of Ohio, Cincinnati, 1895; formerly on the staff of the City Hospital; aged 59; died, January 13.

**William Green Abernethy,** Woodland, Miss.; Memphis (Tenn.) Hospital Medical College, 1903; aged 42; died, Dec. 6, 1923, of chronic nephritis.

**Charles C. Young,** Elnora, Ind.; Indiana Eclectic Medical College, Indianapolis, 1886; aged 61; died, January 16, following a long illness.

**Sherman Walcutt,** Columbus, Ohio; Hahnemann Medical College and Hospital, Chicago, 1894; aged 58; died, January 15, of heart disease.

**Arsey Womack,** McMinnville, Tenn. (licensed, Tennessee, 1889); aged 72; died, Dec. 15, 1923, of nephritis following a fracture of the hip.

**Frederick Ambrose Davies** ✠ Pittsburgh; Chicago (Ill.) Homeopathic Medical College, 1894; died, January 13, of pneumonia.

**Galen K. Hassenplug** ✠ Denver; Jefferson Medical College of Philadelphia, 1879; aged 67; died, January 12, of pneumonia.

**John Notmann Wilkie,** Brooklyn; Long Island College Hospital, Brooklyn, 1901; aged 55; died, January 22, of heart disease.

**Benjamin Jesse Plunkett,** Duncan, Okla.; University Medical College of Kansas City, Mo., 1896; aged 56; died, January 11.

**Royal Walter Darr,** Atkins, Ark.; University of Nashville (Tenn.) Medical Department, 1901; aged 45; died, Dec. 31, 1923.

**John Lindsey Durham,** Woodville, Ga.; Georgia Eclectic Medical College, Atlanta, 1883; aged 70; died, Dec. 24, 1923.

**Edward L. Stuard,** Covington, Ky.; Penn Medical University, Philadelphia, 1865; aged 80; died, January 8, of senility.

**Erastus Scott Fisher** ✠ Bluffton, Ind.; Fort Wayne (Ind.) College of Medicine, 1892; aged 78; died, Dec. 7, 1923.

# The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

## "LIME STARVATION" REDIVIVUS

### Mr. McCann Tells Physicians How to Treat Tuberculosis

"A terrific storm is brewing in New York medical circles over the secret recognition by experts in tuberculosis connected with the New York Department of Health of the most successful method of treating the wage-earning, consumptive without removal from home or work now known to the modern practitioner—the 'lime starvation' treatment."

This somewhat exhausting sentence is the opening gun of a barrage of articles by Alfred W. McCann, now appearing in the New York *Evening Mail*. Mr. McCann, as is his wont, thrashes himself into a very frenzy as he, in large and black type, "Lifts Cover from Decaying Medical Politics." The public is told that the American Medical Association is "an arbitrary, dictatorial, dogmatic, orthodox hierarchy which categorically refuses to discuss or debate whatsoever medical issue it professes to hold in abhorrence." The public has been told this before, but probably not in quite as many adjectives to the running inch. But Mr. McCann is an expert in the use of adjectives.

The sum and substance of Mr. McCann's articles are to the effect that there is a deep laid plot on the part of the New York Tuberculosis Association, the New York Health Commissioner or the American Medical Association to keep from the medical profession and the public the alleged fact that there is a treatment for tuberculosis infinitely more efficacious than that now employed. This treatment, he tells us, is based on the theory that tuberculosis is caused by "lime starvation." McCann tells us that the originator of the "lime starvation" theory and treatment was one Dr. John F. Russell and he also brings in the name of Dr. William Grant Hague as one of the chief apostles of Dr. Russell's theory and treatment.

#### THE "SUPPRESSED" REPORT

McCann has a good deal to say about an alleged favorable report on the virtues of the "lime starvation treatment" which he claims to have been made by a "Dr. Clarence Martin" (who doesn't exist) or Dr. D. Clifford Martin. He states further that the former Commissioner of Health of New York City, on the basis of Dr. Martin's report, appointed a committee to investigate still further the "lime starvation treatment." McCann charges that the report of this committee "strangely disappeared" and hints that it was "suppressed." He rises to rare altitudes of oratory in denouncing its suppression—that is, in his first few articles. Later in the series, however, he declares that he has learned from "unimpeachable authority which, for obvious reasons cannot now be revealed" that the "suppressed" report was of no value anyway.

Overlooking for the moment the vituperation and vilification in which McCann indulges, the gist of the man's story is that the marvelous treatment which the medical powers-that-be have suppressed and kept from the knowledge of the profession and the public is that formulated by Dr. John F. Russell and sponsored by Dr. William Grant Hague. A little history will prove enlightening. For more than twenty-five years, Dr. Russell has been riding the "lime starvation" hobby. For nearly ten years a New York concern has been exploiting the "Russell Emulsion" and the "Russell Prepared Green Bone."

Dr. Russell has had as a first lieutenant Dr. William Grant Hague who a few years ago was going around the country delivering lectures to such medical societies as would listen to him. Ostensibly these lectures were on "lime starvation in tuberculosis"; essentially they were advertisements for the Russell products. At the end of a "lecture" Dr. Hague would distribute the Russell products "literature." So crude was this scheme that at least one state medical society sent a letter of warning to its county component societies suggesting that it was not desirable to invite Hague to give his "lecture."

All this time the theories of Russell were heralded all over the country by the lavish distribution of reprints as well as by the even more liberal scattering of "straight" advertising matter on the Russell products. And yet McCann declares that the medical profession has never had a chance to hear of the "lime starvation treatment"!

#### ENTER "NEU-BONE"

A careful reading of McCann's series indicates that they are essentially a "re-write" of the advertising matter and supplementary "literature" on the Russell products interspersed with picturesque denunciations of the medical profession. In his fourth article Mr. McCann describes "for the benefit of physicians," the pathological condition "known as the 'lime starved state' as formulated by Dr. William Grant Hague of New York City." In the same article one learns that, in addition to giving the tuberculous patient a mixture of milk, egg and dilute hydrochloric acid, there is a supplemental treatment consisting of "an organic lime food, which, for want of a better name, we shall call neu-bone." Mr. McCann then states:

"Neu-bone is prepared from young, fresh chicken bones which are ground and mixed with sterilized glycerine employed as a preservative, and then, after treatment with an active pepsin enzyme and dilute hydrochloric acid, are incubated at body temperature."

This sounds familiar. Let us turn to the advertising booklet describing the "Russell Prepared Green Bone" whose praises have been sung from Maine to California and from Minnesota to the Gulf. Here we read:

"The Russell Prepared Green Bone. This food is made as follows: The bones of young chickens are . . . ground to a pulp. This pulp is mixed with glycerine, dilute hydrochlorie acid, rennet and pepsin and placed in an incubator. . . ." [Price $1.25 for two ounces.]

Of course, Mr. McCann insists that he does not mean to intimate that "the lime starvation treatment must carry upon its back the fortunes of any privately-owned or patented emulsions. . . ."

Summed up, McCann's entire campaign resolves itself into two charges: The first charge is that there has been a conspiracy of silence on the part of those "in authority"—whatever that means—in the medical profession relative to Russell's "lime starvation" theories and treatment and that the medical profession has not been given an opportunity to test either the theory or the treatment. The facts are, Russell has aired his theories in medical journals for years and his articles have been abstracted by other medical journals. THE JOURNAL as long ago as 1910 devoted one entire article on the treatment of tuberculosis, to abstracting Russell's original article on the lime starvation theory and treatment and in that article THE JOURNAL stated that Russell's suggestion was "worthy of practical application." Russell's original articles were reprinted by the thousands and sent out all over the country in advertising the Russell products, the "Russell Emulsion" and the "Russell Prepared Green Bone." Furthermore, William Grant Hague went over the country at somebody's expense delivering "lectures" on Russell's theory and treatment and distributing the Russell "literature."

The second charge of McCann is that the medical profession does not know how to treat tuberculosis and "the official doctrine of the American Medical Association is that the only hope of the victim of tuberculosis is the sanitarium." This is so clumsy and futile a falsehood that it is unworthy of any detailed denial.

The medical profession is thoroughly familiar with the lime starvation theory and treatment. It has been weighed in the balance of therapeutic and clinical tests and found wanting. In 1917 the Council on Pharmacy and Chemistry, in its report on the Russell products stated that the "overworked lime starvation theory certainly lacks any tangible confirmation." The Council further declared, in commenting on the quackish claims made for the products:

> "On the uninitiated the exaggerated pseudo-scientific language of the pamphlet and circular advertisement will probably make some impression. Unfortunately such things count not only with the layman who, having no technical knowledge of physiology, cannot be expected to weigh the evidence, but also with those medical men who,

while scientifically educated, are influenced by unscientific claims when plausibly presented. The pamphlet is a striking example of a style which is dangerous because it smacks of science."

Mr. McCann has done what other sensational writers have done before. In an attempt to make a sensation, he has gone out of his element. McCann is wild enough when he confines himself to a discussion of food problems. When he goes into therapeutics he is hopeless.

In closing, it is worth noting that the McCann campaign is leading up to the opening of a "lime starvation clinic" for which McCann and the *Evening Mail* are asking a $20,000 subscription. One wonders what physician will be put in charge of the clinic. Will it be Dr. John F. Russell, or Dr. William Grant Hague, or both? One wonders, too, whether the "treatment" will be administered under the name of "The Russell Emulsion" and "The Russell Prepared Green Bone" or under some other name.

If it were not for the dangers that pseudo-science holds for the public health when it is played up sensationally, McCann's vaporings would be unworthy of attention. But in his new job with the *Evening Mail* McCann seems to have felt the urge for doing a "circulation builder" stunt and, doubtless, his employers are satisfied with the results in this direction.

## Correspondence

### CANCER IN HONGKONG, SHANGHAI AND BERMUDA

*To the Editor:*—Through the kindness of the Statistical Division, Army Medical Library, Washington, D. C., there have recently come to me some rather interesting cancer data for the European and Chinese population of Hongkong, the European population of Shanghai and the general population (mostly mixed blood negro) of Bermuda, which may be interesting to the medical profession and to those concerned with cancer investigations otherwise.

The Hongkong data are for the period 1911-1920.

*Mortality Statistics of Cancer in Hongkong, 1911-1920*

| Year | Foreign Population | Deaths from Cancer, Foreigners | Rate per 100,000 | Chinese Population | Cancer Deaths Among the Chinese | Rate per 100,000 |
|---|---|---|---|---|---|---|
| 1911 | 18,837 | 5 | 26.5 | 354,790 | 36 | 10.1 |
| 1912 | 21,163 | 6 | 28.4 | 446,614 | 37 | 8.3 |
| 1913 | 21,470 | 5 | 23.2 | 467,644 | 46 | 9.8 |
| 1914* | 20,710 | 7 | 33.8 | 480,594 | 29 | 6.1 |
| 1915* | 13,320 | 10 | 75.1 | 495,840 | 38 | 7.7 |
| 1916 | 13,360 | 6 | 44.8 | 515,620 | 42 | 8.1 |
| 1917 | 13,500 | 12 | 88.9 | 521,000 | 45 | 8.6 |
| 1918 | 13,500 | 4 | 29.3 | 548,000 | 57 | 10.4 |
| 1919 | 13,600 | 7 | 51.5 | 484,500 | 46 | 9.5 |
| 1920 | 14,000 | 8 | 57.1 | 634,150 | 73 | 11.5 |
| 1911-1920 | 163,490 | 70 | 42.8 | 4,949,352 | 449 | 9.1 |

* The tremendous decrease in population (foreign) between 1914 and 1915 is probably due to the departure of nearly every able-bodied man to join the armies fighting in Europe.

It is obvious that the rates shown for certain years, at least, are of doubtful value on account of the uncertainty as regards the correct number of foreign residents since the war. Previous to 1915, however, the data may be accepted with assurance of accuracy, and likewise for the last three years.

In view of the fact that the actual mortality is very small, it should not be difficult to subject the returns to a qualified analysis, especially as regards organs and parts of the body affected and according to sex.

The data for the Chinese population are more uniform and not suggestive of very material changes during the period under observation. Nevertheless, the highest rate is recorded for the year 1920, which is several points in excess for seven years of the ten year period. Here, again, the data regarding organs and parts of the body affected with a due regard to sex would throw much light on doubtful questions concerning the incidence of malignant disease among the Chinese population. The age distribution among the Chinese in question, of course, differs essentially from the foreign element.

*Mortality Statistics of Cancer in Shanghai, 1911-1921*

| Year | Foreign Population | Deaths from Cancer Among Foreign Population | Death Rate from Cancer per 100,000 Among Foreigners |
|---|---|---|---|
| 1911 | 13,770 | 9 | 65.4 |
| 1912 | 14,000 | 7 | 50.0 |
| 1913 | 14,250 | 10 | 70.2 |
| 1914 | 14,300 | 15 | 104.8 |
| 1915 | 18,519 | 15 | 81.1 |
| 1916 | 19,050 | 9 | 47.3 |
| 1917 | 19,750 | 11 | 55.7 |
| 1918 | 21,000 | 19 | 90.5 |
| 1919 | 22,000 | 13 | 59.1 |
| 1920 | 23,307 | 15 | 64.3 |
| 1921 | 24,000 | 12 | 50.0 |
| 1911-1921 | 203,946 | 135 | 66.2 |

The average cancer rate for the European population of Shanghai for the period under observation was 66.2, which is considerably higher than the average high rate reported for the European population of Hongkong. How far this is the result of the possibly more accurate ascertainment of the population is, of course, open to question. In some years the rate has been extremely high, exceeding the American average. Here, again, it would obviously serve a most useful purpose, if the comparatively small number of deaths from cancer were subjected to a qualified and extended analysis. This, of course, should be amplified by data regarding the age and sex distribution of the European population.

*Mortality from Cancer in Bermuda, 1911-1920*

MALE (WHITE AND COLORED)

| Year | Population | Deaths from Cancer | Rate for 100,000 Population |
|---|---|---|---|
| 1911 | 9,070 | 4 | 44.1 |
| 1912 | 9,283 | 6 | 64.6 |
| 1913 | 9,497 | 6 | 63.2 |
| 1914 | 9,839 | 4 | 40.6 |
| 1915 | 10,015 | 8 | 79.8 |
| 1916 | 10,238 | 9 | 87.9 |
| 1917 | 10,441 | 3 | 28.7 |
| 1918 | 10,558 | 4 | 37.8 |
| 1919 | 10,540 | 8 | 75.8 |
| 1920 | 10,596 | 5 | 47.1 |
| 1911-1920 | 100,077 | 57 | 57.0 |

FEMALE (WHITE AND COLORED)

| | | | |
|---|---|---|---|
| 1911 | 9,924 | 2 | 20.2 |
| 1912 | 10,109 | 6 | 59.2 |
| 1913 | 10,293 | 7 | 68.0 |
| 1914 | 10,604 | 7 | 66.0 |
| 1915 | 10,786 | 10 | 92.7 |
| 1916 | 10,977 | 7 | 63.8 |
| 1917 | 11,188 | 9 | 80.4 |
| 1918 | 11,282 | 4 | 35.4 |
| 1919 | 11,329 | 9 | 89.4 |
| 1920 | 11,391 | 7 | 61.4 |
| 1911-1920 | 107,883 | 68 | 63.0 |

The data for Bermuda are for the period 1911-1920, and apparently are unaffected by the war. The information is divided according to sex, being presented in two tables.

It may be said, in this connection, that the white element in Bermuda in proportion to the total is a relatively negligible quantity. It would, of course, be extremely valuable to have the data separate for white and colored, but it is difficult to ascertain precisely the pure white element, since some persons pass as white although probably of negro intermixture.

The rates have varied more or less during the period under review, and I have therefore calculated the average rate for the whole period for the two races combined. For the male

population the rate was 57.0 per hundred thousand, against 63.0 for the female population.

This conforms, on the whole, to the cancer death rate of the colored population of this country. The pure negro element is of relatively small importance, and, on the whole, the population may be looked on as one of mixed origin. It may further be stated that in their general habits, diet, food supply, etc., the white and colored elements of Bermuda conform much to one another, as is the case in this country. At the same time, it would be most valuable to study the dietary habits of the population with a view of ascertaining how far the latter bear on possible precancerous conditions.

A cancer survey of Bermuda would involve no material difficulties, for the number of deaths to be considered is relatively small, while every portion of the island is easily accessible. An analysis of the mortality by organs and parts with a due regard to sex, with comparative data for the West Indies, would throw much light on questions that demand solution. If such a survey should be made, a corresponding investigation in the larger and more populous island of Jamaica would add enormously to the basic facts of the cancer situation.

FREDERICK L. HOFFMAN, Wellesley Hills, Mass.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### TREATMENT OF ANEMIA

*To the Editor:*—Please give the latest accepted treatment for pernicious anemia, general management of a case, and expectation of life in a man of 42, who has this disease. The symptoms appeared last July, and the red count at present is between one and two million.

J. J. C., M.D., H. S., N. Y.

ANSWER.—Arsenic and blood transfusions are the two established forms of therapy in the treatment of pernicious anemia, though neither is curative. Arsphenamin in doses of from 0.03 to 0.06 gm. intramuscularly at intervals of days or weeks has been found useful in some cases, though it has failed in others. While the chances of spontaneous remission are about 35 per cent., transfusion appears to increase the chance by about 10 to 20 per cent., and early transfusions of moderate amounts of blood (500 c.c.) repeated every two or three weeks, as required, seem to give the best results. Splenectomy is also only palliative, and does not prolong life. It may be advised, during a remission, in those rather rare cases of pernicious anemia with large spleens that approach the character of chronic acquired hemolytic jaundice.

The general management of a case of this disease includes fresh air, sunshine, warmth and rest in bed, together with the best possible diet that the patient can tolerate, including the use of diluted hydrochloric acid to whatever extent it may be required to improve the patient's digestion. A thorough search for foci of infection should be instituted, the teeth and gums, the sinuses, the alimentary canal and the genito-urinary tract being each submitted to careful examination.

Although the ultimate prognosis is grave, a patient may recover even from an apparently hopeless condition, pass into a period of remission, and enjoy relatively good health for months or even years.

### DISCOLORATION FROM PHENOL (CARBOLIC ACID)

*To the Editor:*—What can be done in the case of a young woman who had concentrated phenol applied to the face for a short time, after which alcohol was reapplied, but apparently too late? The result is a discoloration about the size of a nickel.

SAMUEL KAHN, M.D., New York.

ANSWER.—This discoloration is probably the result partly of tanning—increased deposit of pigment—in this case and partly to a chronic inflammatory reaction that persists. It will probably gradually improve and in the end disappear entirely, but this may be only after months. Time is the best remedy for it, and it is doubtful whether any active attempt at getting rid of it will do any good. If it persists, however, well after the inflammation has disappeared, say a year from the time of the application of phenol, its disappearance may be aided by the application of a strong solution of mercuric chlorid, 1:250, in alcohol. This should be applied on a small cloth until it produces a slight sense of burning and then taken away immediately. The exfoliation that follows sometimes helps these patches of pigment.

### "MANGE NOT TRANSFERABLE FROM DOG TO MAN"

*To the Editor:*—The answer to the question with regard to the transmission of scabies from dog to man (THE JOURNAL, January 26, p. 325) is hardly in full accord with the facts. In the first place, the statement that Pusey does not mention any instances of transmission of skin diseases from dog to man in his discussion on *Acarus, Demodex folliculorum* or similar organisms is contradicted by a paragraph on page 694 of his "Principles and Practice of Dermatology," in which, in discussing dermatoses from animal parasites which penetrate the skin, under "Sarcoptes Scabiei Communis," he says: "Various species of acari or sarcoptes, which are almost indistinguishable in structure and habits from the acarus that infects man, are found in the horse, sheep, dog, pig, chicken and other animals. The female burrows in the skin in the same way as in man. These occasionally attack man and produce eruptions similar to that of human scabies, except that the burrows are not formed. These parasites, however, cannot live in the human skin, and the eruptions which they excite disappear spontaneously in six or eight weeks."

In my translation of Darier's "Précis de dermatologie," this French authority writes, after discussing scabies norvegica, "The other animal acariases, which are not caused by the species 'hominis,' are very rare. The absence of burrows is nearly always noted. The lesions consist of a diffuse, itching, miliary or polymorphous eruption. These anomalous forms of scabies may be derived from the cat, birds (dermanyssus avium), dogs, sheep, goats, camels, hogs, foxes, etc. They are, as a rule, readily amenable to treatment, or (according to Jadassohn) undergo a spontaneous cure."

During my attendance at European clinics extending over more than a decade, I have had occasion to observe a number of these rare cases of transmission of acari from animal to man.

Of interest, finally, is the observation that *Demodex folliculorum*, which is almost a normal inhabitant of the hair follicle of man, causes skin manifestations in the dog which, on account of the accompanying abscess formation, may end fatally.

KARL G. ZWICK, M.D., Cincinnati.

### MORBIDITY STATISTICS OF MALES

*To the Editor:*—Where can I find morbidity statistics among adult males; that is, statistics giving the ratio of illness per capita in adult males, especially in this locality?

WILLIAM W. HARTMAN, M.D., Chicago.

ANSWER.—The following publications probably contain the information desired:

Defects Found in Draft Men, War Department, 1920.
U. S. Abridged Life Tables, Bureau of the Census, Government Printing Office, Washington, D. C.
Mortality Statistics, Bureau of the Census.

These books will be found at public libraries.

The department of health of Chicago publishes vital statistics that pertain to the city.

### DOSAGE OF CORPUS LUTEUM

*To the Editor:*—What is the proper dose of corpus luteum for relief of headache and other nervous symptoms occurring at or near the menopause? What untoward symptoms occur, if any, under its use.

H. B. CHAPIN, M.D., Torrington, Conn.

ANSWER.—The dose of desiccated corpus luteum is from 0.3 to 0.6 gm., preferably given in capsules. Excepting that slight gastric disturbances and dizziness occasionally occur, corpus luteum appears to be nontoxic, even in large doses, unless given intravenously.

### "BARREL STAVE SPLINT"

*To the Editor:*—In Queries and Minor Notes (THE JOURNAL, January 19) a correspondent asked about the barrel stave splint. In THE JOURNAL, Feb. 6, 1909, p. 467, was an illustrated article on the "barrel-hoop splint," by Dr. Leigh F. Watson of Oklahoma City, showing how the splint is made and applied. This, or some modification of the same principle, is the best appliance I know of for fracture of the clavicle, and gives greatest satisfaction to the patient. It should be inspected and adjusted at frequent intervals.

CHARLES W. ALLEN, M.D., Renfrew, Pa.

# Medical Education, Registration and Hospital Service

## COMING EXAMINATIONS

CALIFORNIA: Los Angeles, February 18-20. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

CONNECTICUT: Hartford, March 11-12. Sec., Reg. Bd., Dr. Robert Lee Rowley, 79 Elm St., Hartford.

CONNECTICUT: New Haven, March 11. Sec., Eclec. Bd., Dr. James E. Hair, 730 State St., Bridgeport.

CONNECTICUT: New Haven, March 11. Sec., Homeo. Bd., Dr. E. C. M. Hall, 82 Grand Ave., New Haven.

KANSAS: Topeka, February 12. Sec., Dr. Albert S. Ross, Sabetha.

MAINE: Portland, March 11-12. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

MASSACHUSETTS: Boston, March 11-13. Sec., Dr. Charles E. Prior, 144 State House, Boston.

NATIONAL BOARD OF MEDICAL EXAMINERS: Written Examinations in Class A Medical Schools. Part I, February 13-15, 1924. Secretary, J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.

NEW HAMPSHIRE: Concord, March 13-14. Sec., Dr. Charles Duncan, Concord.

VERMONT: Burlington, February 12. Sec., Dr. W. Scott Nay, Underhill.

WYOMING: Cheyenne, February 11-13. Sec., Dr. J. D. Shingle, Cheyenne.

### Alabama January Examination

Dr. S. W. Welch, chairman, Alabama State Board of Medical Examiners, reports the written examination held at Montgomery, Jan. 9-12, 1923. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Ten candidates were examined, all of whom passed. Eleven candidates were licensed by reciprocity. The following colleges were represented:

| College | PASSED | Year Grad. | Per Cent. |
|---|---|---|---|
| University of Alabama | | (1909) | 77.2 |
| Emory University | | (1922) | 84.1 |
| Tulane University | | (1922, 4) | 86.5, 87.6, 88.1, 89.9 |
| Harvard University | | (1918) | 88.2, (1921) 88.2 |
| University of Michigan Medical School | | (1921) | 89 |
| Jefferson Medical College of Philadelphia | | (1922) | 86.3 |

| College | LICENSED BY RECIPROCITY | Year Grad. | Reciprocity with |
|---|---|---|---|
| Bennett Medical College | | (1915) | Georgia |
| Chicago College of Medicine and Surgery | | (1917) | Illinois |
| Rush Medical College | | (1913) | Penna. |
| University of Louisville | | (1911) | Tennessee |
| Tulane University | | (1908) | Louisiana |
| Columbia University College of Phys. and Surgs. | | (1911) | Washington |
| Leonard Medical School | | (1910) | Georgia |
| Woman's Medical College of Pennsylvania | | (1902) | New Jersey |
| University of Tennessee | | (1890) | Tennessee |
| Vanderbilt University | | (1913) | Texas, (1920) Tennessee |

### Minnesota October Examination

Dr. Thomas S. McDavitt, secretary, Minnesota State Board of Medical Examiners, reports the oral, written and practical examination held at Minneapolis, Oct. 2-4, 1923. The examination covered 15 subjects and included 80 questions. An average of 75 per cent. was required to pass. Eight candidates were examined, all of whom passed. Twenty-six candidates were licensed by reciprocity. One candidate was licensed by endorsement of his credentials. The following colleges were represented:

| College | PASSED | Year Grad. | Per Cent. |
|---|---|---|---|
| Northwestern University School of Medicine | | (1922) (1923, 2)* | 90.2, 87, 91.9 |
| Rush Medical College | | (1923, 2)* | 90.9, 93 |
| University of Pennsylvania | | (1921, 2) | 86.7, 89.1 |
| University of Lausanne, Switzerland | | (1914) | 90 |

| College | LICENSED BY RECIPROCITY | Year Grad. | Reciprocity with |
|---|---|---|---|
| Stanford University School of Medicine | | (1922) | California |
| University of California Medical School | | (1923) | California |
| Loyola University School of Medicine | | (1919) | Illinois |
| Northwestern Univ. Med. School | | (1921) | Illinois, (1923) Ohio |
| Rush Medical College | | (1922, 2) | Illinois |
| Indiana University School of Med. | | (1916), (1917), (1922) | Indiana |
| State University of Iowa College of Med. | | (1916), (1922) | Iowa |
| Bowdoin Medical School | | (1920) | Maine |
| University of Maryland | | (1913) | Maryland |
| Harvard University | | (1922) | Virginia |
| Creighton Medical College | | (1922, 2) | Nebraska |
| Ohio State University College of Medicine | | (1921) | Ohio |
| University of Cincinnati | | (1922) | Ohio |
| Jefferson Medical College | | (1921) | Penna. |
| University of Pittsburgh | | (1919) | Penna. |
| Vanderbilt University Medical Department | | (1922) | Tennessee |
| University of Texas Department of Medicine | | (1921) | Texas |
| Medical College of Virginia | | (1920) | Virginia |
| Marquette University School of Medicine | | (1923) | Wisconsin |
| McGill University Faculty of Medicine, Quebec | | (1918) | Maine |

| College | ENDORSEMENT OF CREDENTIALS | Year Grad. | Endorsement with |
|---|---|---|---|
| University of Pennsylvania | | (1921) | N. B. M. Ex. |

* These candidates have finished their medical course and will receive their M.D. degrees on completion of a year's internship in a hospital.

# Book Notices

DIE LUNGENPHTHISE. Ergebnisse vergleichender röntgenologisch-anatomischer Untersuchungen. Von Siegfried Gräff, A. O. Professor der pathologische Anatomie, Heidelberg, und Leopold Küpferle, A. O. Professor der inneren Medizin, Freiburg I. B. Paper. Price, $9.60. Pp. 236, with 245 illustrations bound separately. Berlin: Julius Springer, 1923.

One can do no better, in beginning a review of this book, than to read the introduction by Ludwig Aschoff: "The idea of presenting a comparative study, roentgenologically and anatomatically, of the changes which occur in the course of a pulmonary tuberculosis, is so fascinating that many attempts have been made to this end. In order, however, to achieve fruitful results for clinical use, the methods of such examination must be free from criticism and must be born of broad experience. There must be between anatomist and clinician a complete understanding as to nomenclature, evaluation and classification. Finally, the study requires a large material and enormous patience." Even a casual inspection of this work will convince the reader that Aschoff's requirements have been met. The material consists of fifty-two cases, which have been studied clinically, roentgenographically and anatomically. Each case has been carefully considered, clinically and roentgenologically, and the findings thus obtained have been compared with the lung at necropsy. At first, the method of Brauer and Beneke was followed; this consists in filling the lungs, in situ, with solution of formaldehyd, after which the lungs are removed and sectioned. It was found, however, that the use of this method produced some changes in the lungs, as shrinkage, and tension on pleural adhesions, which materially modified the anatomic conditions; so much so, in fact, that comparisons with the roentgenogram were rendered more difficult. To obviate this trouble, the authors made use of a warm 10 per cent. solution of liquor formaldehydi, injected into the femoral vein. After from twelve to twenty-four hours, the lungs were found to be fixed and hard. They were then removed and sections were made. Thin sections were made as required, and portions of the parenchyma removed for study. These small portions of the lung, thus removed, often cleared up doubtful shadows on the plate. The authors have found that roentgen-ray examination of the cadaver, in connection with clinical study, is unsatisfactory because, first, the blood content of the lungs, post mortem, is different from what it is during life; and, secondly, changes may take place in the death agony that materially transform the picture. A comparative study of the lungs is thus rendered more or less unreliable. The time that elapsed between the taking of the roentgenogram and death of the patients and consequent necropsy, in the authors' series, varied. Sometimes it was a few days, sometimes only a few hours. In each case report the time is mentioned. Chapters are devoted to the normal thorax, to a consideration of the roentgenogram as compared with the anatomic findings, pathology, hilum tuberculosis, pleurisy and lymphatic involvement. The illustrations alone are worth a careful study. The work is one of the most painstaking we have seen for many a day, and is a valuable contribution to the literature of pulmonary tuberculosis.

A MANUAL OF CORRECTIVE GYMNASTICS. By Louisa C. Lippitt, Assistant Professor of Physical Education and Director of Corrective Gymnastics for Women, the University of Wisconsin. Cloth. Price, $1.60. Pp. 249, with illustrations. New York: The Macmillan Company, 1923.

"Corrective or therapeutic gymnastics," says the author "may be considered a new science, which was developed as the field of physical education has broadened." And yet the purposes of such exercises were not so badly stated a century ago by Signor Voarino, an Italian, in a book which he wrote

as an appeal to the "aristocracy" to permit and encourage this form of exercise among "the young ladies of England." His method was developed "to restore health to persons who have long suffered under bodily infirmities, to check incipient deformities, and to lay the foundation of health and vigor in those who are yet in the earlier stages of life." This book of Voarino, written in 1826, is, as Mrs. Lippitt says, quaint, interesting and amusing to us of these days of strenuous sport and apparatus work for girls, when one reads of the simple exercise recommended, but the fundamental purpose was there. Mrs. Lippitt pertinently inquires, "Why put a student through the form of taking a physical examination to find out what defects are present if no instruction is thereafter to be given as to how these conditions may be improved?" The qualifications for instructors are set forth at some length, as "desire to teach, a cheerful disposition, patience, sympathy, courage, correct posture, personal cleanliness, thorough knowledge of the work, trustworthiness, enthusiasm, and eagerness to learn"—an admirable catalogue of the qualities that are essential to the successful teacher of any subject. The various exercises are described in two groups: (1) the corrective, or orthopedic, and (2) the medical, or remedial. The corrective exercises are designed to improve the functions of the body (circulation, nervous system, respiration, digestion and muscular system); to correct deformities of spine, feet, joints, etc.; to relieve conditions arising from strains and sprains, or tense atrophic muscles, deformities following injuries and different forms of neuritis, to aid in the education of mental and moral defectives, and to improve imperfect coordination and balance. In remedial gymnastics, relief is sought from such conditions as ptosis, constipation, menstrual disorders, cardiac weakness, neurasthenia, digestive disorders and general debility. The illustrations, mostly photographic, are well selected and clearly executed, and serve to illuminate the text. A very useful and dependable guide for the physician or the teacher of corrective gymnastics.

TRAITÉ DE PATHOLOGIE MÉDICALE ET DE THÉRAPEUTIQUE APPLIQUÉE. Publié sous la direction de Emile Sergent, Professeur de Clinique médicale propédeutique, L. Ribadeau-Dumas, Médecin de la Maternité, et L. Babonneix, Médecin de la Charité. XXIV. Pédiatrie. Tome I. Par Pr. Marfan, Apert, J. Renault, Georges Paul-Boncour, Mlle. Labeaume, Mme. C. de Tannenberg, Ribadeau-Dumas, Pr. Weill, Péhu, Gardere, Pr. Nové-Josserand, Binet, Meyer, Prieur, Lesné, Armand-Delille. Paper. Price, 50 francs. Pp. 1176, with 82 illustrations. Paris: A. Maloine & Fils, 1923.

This is a large, two volume work on pediatrics. It is a system written by various authors, with an introduction by Marfan. The system takes up in detail the various subjects, starting out with hygiene, in which is contained an article on hospitals, one on crèches, one on schools, and one on the teaching of abnormal children. Next follows a long, exhaustive treatise on the feeding of children and diseases of the gastro-intestinal tract. These are taken up from a thoroughly practical standpoint, with very little in the way of reference to scientific facts that do not have a definite, practical bearing. The first volume is almost all taken up with hygiene and feeding, including gastro-intestinal disturbances. There is some work on the social service side, and also a section of 100 pages on diseases of the respiratory tract. The second volume takes up infectious diseases, conditions of the circulation and heart, with diseases of the kidney and liver. There is a long section on nervous disorders of childhood. These conditions of a medical nature are followed by a long section on orthopedic surgery. On the whole, the book is admirable, and should be of great use to a general practitioner who wishes detailed accounts both for diagnosis and for treatment. It is well illustrated.

LABORATORY DIAGNOSIS OF SYPHILIS. A Manual for Students and Physicians. By Hideyo Noguchi, M.D., M.S., Ph.D., Member of the Rockefeller Institute for Medical Research. Cloth. Price, $7.50. Pp. 392, with 59 illustrations. New York: Paul B. Hoeber, Inc., 1923.

In the early days of the Wassermann test, Noguchi wrote the "Serum Diagnosis of Syphilis." That book introduced a modification of the original Wassermann technic which was a factor in establishing the value of the Wassermann test. The "Laboratory Diagnosis of Syphilis" covers the same ground as the older book, and has an added chapter. In the decade that has intervened between these publications, Noguchi has made no fundamental changes in technic, and he says concerning the attempts to standardize the Wassermann reaction that no amount of accuracy in complement, antigen and other factors will be of any value as long as the amboceptor is not quantitatively adjustable. The various precipitation tests that have been devised in recent years are not described in this book in detail, for the author considers that their usefulness has not been established. Noguchi still considers the luetin reaction a valuable diagnostic aid, particularly in tertiary syphilis, in which class of cases it is more constant than the Wassermann reaction. The technic for the "specific complement-fixation" test is briefly given, for there is a possibility that it will become of some practical use. The significance of a positive specific reaction is not explained, but it is not improbable that it is a favorable sign. A valuable chapter in this book is the last one. The kinds of spirochetes are differentiated, and the dark field microscope and methods for staining the spirochete are explained.

GYNECOLOGY. By William P. Graves, A.B., M.D., F.A.C.S., Professor of Gynecology at Harvard Medical School. Third edition. Cloth. Price, $9 net. Pp. 936, with 535 illustrations. Philadelphia: W. B. Saunders Company, 1923.

This book is arranged in three parts. The first part deals with the physiology of the pelvic organs and the relation of gynecology to the general organism. Research of the greatest importance has been done in this field in recent years. The second part is intended chiefly for the undergraduate student. There is a description of diseases that are essentially gynecologic. The underlying pathologic processes are enumerated, and microscopic sections illustrating these diseases are presented. The third part is devoted exclusively to gynecologic surgery, and was intended for advanced students and practitioners. The operations discussed are those which the author considers best suited to their purpose. As a result, some procedures which may be excellent are omitted; but no less than seven round ligament operations for malposition of the uterus have been included, which may be considered an indication that other subjects receive full consideration. This is a textbook and a general reference book of gynecology.

J.-L. ALIBERT, MÉDECIN DE L'HÔPITAL SAINT-LOUIS. (1768-1837). Par L. Brodier, Ancien Chef de Clinique de la Faculté de l'Hôpital Saint-Louis. Paper. Pp. 387, with illustrations. Paris: A. Maloine & Fils, 1923.

This is an interesting sketch of the life, personal characteristics and medical career of one of the outstanding figures in the history of dermatology. It is of interest to note that Alibert's dissertation on pernicious or intermittent ataxic fevers, for the doctor's degree, passed through five editions and was translated into English by Charles Caldwell in Philadelphia in 1808. His main work on skin diseases is the large atlas, which appeared in 1806 and which is a classical contribution. Alibert's clinics on skin diseases, which in the summer time were conducted under the trees on the hospital grounds, attracted a large number of students from all countries. The book is of special interest to dermatologists who wish to study the historical growth of their specialty.

BULLETIN DE LA FÉDÉRATION INTERNATIONALE PHARMACEUTIQUE. Publié sous la direction du bureau. No. 4. Paper. Pp. 254. La Haye, 1923.

This report of the transactions of the third general meeting of the International Pharmaceutical Federation, held at Brussels in 1922, contains a comparison of the nomenclature of the various pharmacopeias, and of the laws existing in several countries on the sale of pharmaceutic specialties and of narcotic and poisonous substances.

CLINICAL DIAGNOSIS BY LABORATORY METHODS. A Working Manual of Clinical Pathology. By James Campbell Todd, M.D., Professor of Clinical Pathology, School of Medicine, University of Colorado. Fifth edition. Cloth. Price, $6 net. Pp. 762, with 325 illustrations. Philadelphia: W. B. Saunders Company, 1923.

This book covers laboratory diagnosis in a simple and practical manner. The introductory chapter on the use of the microscope is very apropos. There is a chapter on bacteriologic methods—culture mediums, staining, etc.—and a list of apparatus and a table of findings in important diseases in an appendix. Perhaps these give the book an elementary atmos-

phere. However, it seems that all of the important methods of laboratory examination have been considered, and enough has been said to make them understood. There are many illustrations and a number of colored plates. References have been purposely omitted. This is a handy book, well suited for students and practicing physicians.

## *Medicolegal*

### Misrepresentations About Having Spit Blood and Having Had Influenza

*(George Washington Life Ins. Co. v. American Collapsible Box Co. et al. (N. C.), 117 S. E. R. 785)*

The Supreme Court of North Carolina, in affirming a judgment that called for the surrender and cancelation of an insurance policy, says that a statute of that state provides that all statements in any application for a policy of insurance shall be deemed representations and not warranties, and a representation, unless material or fraudulent, will not prevent a recovery on the policy. In this case it appeared that in the application for the insurance policy in question and in answer to direct questions on the subject, asked and answered as an inducement to the contract, the applicant stated that he had never had spitting of blood and had never had Spanish influenza, and it appeared that both statements were false. It is very generally recognized that the spitting of blood always is regarded as a serious symptom, and not infrequently indicates the presence or near threat of tuberculosis (the disease of which the insured died). It is similarly recognized that Spanish influenza has a tendency, at least for a period following the disease, to weaken the resisting powers of a patient and render him more likely to succumb to an attack of serious illness, and assuredly its existence, or the fact that an applicant for insurance had been subject to such a disease, would naturally call for further and fuller investigation of the case. This being true, in this court's opinion both of these things—the having spit blood and the having had Spanish influenza—should be regarded as material, and for the false statements concerning them it was properly adjudged that this insurance policy should be set aside. It was urged that the jury in its verdict had throughout negatived any and all existence of fraud on the part of the applicant, but the statute itself and the general principles applicable are to the effect that fraud is not always essential and that the contract will be avoided if statements that are false and material are made and accepted as inducements to the contract.

### Execution of Orders for Isolation of Women

*(Nyberg v. Board of Commissioners et al (Kan.), 216 Pac. R. 282)*

The Supreme Court of Kansas says that this action, in which a writ of mandamus was sought, was brought by the plaintiff as city physician to compel the sheriff to execute, and the board of county commissioners of Sedgwick County to pay for executing, an order isolating at the state industrial farm at Lansing a woman affected with venereal disease. The petition disclosed an order for isolation issued by the plaintiff in his official capacity and directed to the sheriff; refusal of the commissioners to be responsible for the sheriff's fees and expenses in executing the order, and the willingness of the sheriff to execute the order but for the attitude of the commissioners.

The authority of the plaintiff as a health officer to issue an order of isolation was not open to dispute. Technically, the order should have directed isolation at the Kansas state quarantine hospital for women; but the variance was immaterial, since that is the name applied to the state industrial farm when used for quarantine purposes. The substantial question was: Must the sheriff execute, and the commissioners bear the expense of executing, the order? Execution of the order required restraint of the woman, and consequently must be by some one who might rightfully keep and vindicate custody from Wichita to Lansing. Authority of police officers of the city is limited to municipal jurisdiction. The sheriff is the state's chief executive officer in his county, and he is the only officer possessing the necessary authority outside his county.

Special provision not having been made for payment of expenses incurred in executing isolation orders, the general provision of the statute relating to payment by the county commissioners of the sheriff's expenses applies. This is no hardship to the county, because the service is rendered in a matter of quarantine, the expense of which falls ultimately on the county.

The commissioners challeged the capacity of the plaintiff to maintain this action. The court is in doubt about the matter. Perhaps the state, on the relation of the attorney general, ought to be substituted as plaintiff. However, from what has been said it should be clear to the sheriff that he ought to execute the order at once, and present his voucher to the board of county commissioners in the usual way, the disposition of this case being postponed for him to do that and advise the court of the fact, and to see whether the attitude of the board at that time had not changed.

### Law Violated by Chiropractor—Sentence to Hard Labor

*(Thompson v. State (Ala.), 97 So. R. 258)*

The Court of Appeals of Alabama, in affirming a judgment of conviction of defendant Thompson, a chiropractor, says that he was convicted of treating or offering to treat diseases of human beings without having first obtained a certificate of qualification from the state board of medical examiners. The first and second counts of the indictment were substantially in the words of the statute, and demurrers to them were properly overruled. It was not necessary to state what particular human being, or what particular human disease, the defendant treated or offered to treat.

Chiropractors diagnose and treat human ailments, and before practicing "chiropractic" must obtain a certificate of qualification from the state board of medical examiners. The statutory requirement that all persons who treat or offer to treat human diseases as a profession and for a livelihood shall first obtain a certificate of qualification from the state board of medical examiners is a police regulation, and the legislature may prescribe a test by which such qualification may be determined, and may confer authority on a board to conduct the examination for this purpose. The state board of medical examiners has been designated by law to conduct such examinations and issue certificates of qualification. The trial court did not err in giving the jury the charge, requested by the state, that it was not necessary for the state to prove that the defendant did not have a certificate of qualification from the state board of medical examiners. As the state had proved that the defendant treated human disease, the burden was cast on the defendant to show that he had obtained the certificate of qualification required by law.

The only witness examined testified that the defendant treated him for rheumatism or writers' cramp, for which he paid the defendant; that the system by which the defendant treated him was known as chiropractic, and that that was what the defendant called it. The defendant adjusted the spinal column and the nerves and muscles leading to it. There was a sign on the door or entrance to the defendant's place of business, with "Dr." before his name, and "Chiropractor" after it. The objection of the defendant to the question asked the witness, "Did he state what he said he was doing would relieve that ill?" was properly overruled. The tendency of the evidence was to show that the defendant knowingly treated the disease from which the witness was suffering. But objection to the question asked the witness, "Have you had medical treatment in your life?" was properly sustained. That information sought was immaterial to the inquiry involved.

The court sentenced the defendant to hard labor for the county for thirty days, but that part of the judgment is reversed and the cause remanded for proper sentence, because the statute provides for punishment by fine, and as additional punishment "imprisonment," and imprisonment under the statute creating the offense means imprisonment in the county jail, and not hard labor for the county.

# Current Medical Literature

## AMERICAN

Titles marked with an asterisk (*) are abstracted below.

### American Journal of Medical Sciences, Philadelphia

**166:** 781-936 (Dec.) 1923

Gastric Ulcer. Rational Regimen of Treatment. F. Smithies, Chicago.—p. 781.
Reaction of Paratonsillar Tissues to Tonsillectomy. Etiology of Post-tonsillectomy Pulmonary Abscess. G. Fetterolf and H. Fox, Philadelphia.—p. 802.
*Odd Carbon Fats in Treatment of Diabetic Ketosis. M. Kahn, New York.—p. 826.
Arthritis and Rheumatoid Conditions. R. Pemberton, Philadelphia.—p. 833.
*Occurrence of Fever in Malignant Disease. L. H. Briggs, San Francisco.—p. 846.
*Scarlet Fever as Reaction of Hypersensitiveness to Streptococcus Protein. L. D. Bristol, New York.—p. 853.
Modern Methods of Treating Lobar Pneumonia. H. M. Thomas, Jr., Baltimore.—p. 877.
*Importance of Atavism in Diagnosis of Hereditary Hemorrhagic Telangiectasia. T. Fitz-Hugh, Jr., Philadelphia.—p. 884.
Experimental Study of Meltzer-Lyon Test. Physiology of Gallbladder and Sphincter Vateri. J. S. Diamond, New York.—p. 894.

**Carbon Fats in Treatment of Diabetic Ketosis.**—Kahn asserts that ketosis is due to the pathobolic breakdown of fats in the absence of carbohydrate oxidation. Natural fats are all glycerids of fatty acids containing an even number of carbon atoms, which during abnormal breakdown yield butyric acid and the ketone substances of diabetic ketosis. An odd carbon fatty acid fat has been synthesized by Kahn which is palatable, is absorbed to about 90 per cent. and is catabolized in the body of diabetic patients without the production of ketones. The diabetic patient's diet can be much increased by this fat. It allays hunger and stops the loss of weight. It may be fed ad libitum.

**Fever in Carcinoma.**—A series of 238 cases of undoubted carcinoma of various organs was studied by Briggs to determine the incidence of fever in malignant growths. Thirty-eight and two-tenths per cent. of these cases showed fever, not due to any known complication, at some time in their hospital stay. Neoplasms of the lung and liver gave the highest percentage of fever, while in the other organs fever incidence fell rather closely around 33 per cent. Fifteen and one-tenth per cent. showed fever due to some obvious complication, the occurrence of these complications being greatest in cancer of the esophagus. Isolated rises in temperature were by far the most frequent febrile phenomenon, comprising 65.9 per cent. of all febrile cases and 25 per cent. of all. The occurrence of metastases did not appear to influence the incidence of fever. The occurrence of ulceration did not increase the liability to fever, except as it produced complicating infections in surrounding structures.

**Scarlet Fever is Allergic Protein Reaction.**—An attempt is made by Bristol to demonstrate the almost complete uniformity in the clinical signs and symptoms of drug allergy, serum allergy and scarlet fever. It is emphasized in this study that virulent hemolytic streptococci are present, frequently in pure culture, in practically 100 per cent. of scarlet fever throats, and that they are neither so generally present, nor in such enormous numbers in other diseases or normal throats. By the use of cutaneous protein sensitization tests it is demonstrated that various apparently normal persons who have had scarlet fever in the past or who never have had the disease show from 41 to 61 per cent. of positive reactions when tested with streptococcus protein. On the other hand, cutaneous tests with streptococcus protein on persons during the active course of scarlet fever, particularly in the early stages, are found to be uniformly negative. From this it may be concluded that while a fair proportion of normal persons are hypersensitive to this particular bacterial protein, individuals with active scarlet fever apparently are in a state of desensitization. It is suggested, therefore: (*a*) that scarlet fever is a reaction of specific hypersensitiveness to streptococcus protein; (*b*) that scarlet fever is a compound condition, involving primarily a local streptococcic infection (usually of the throat, but frequently of an accidental or operative wound, burns or associated with the puerperium); and secondarily, a streptococcus protein intoxication in those who are hypersensitive.

**Atavism in Hereditary Hemorrhagic Telangiectasia.**—Fitz-Hugh says that the literature discloses 212 afflicted persons belonging to thirty families exhibiting the disease in classical form. There are seven instances of atavistic inheritance among these. The literature also contains reports of similar, though apparently nonhereditary, cases which should be classed as atavistic examples of the disease. The absence of characteristic family history does not preclude the diagnosis of this disease, which should be borne in mind in any case presenting obscure hemorrhage. Especially suggestive in the analogy between this disease and certain cases of so-called essential hematuria, particularly the "hereditary hematuria" group. Symptomatic cure can be accomplished for the majority of these patients by careful and, if necessary, repeated cauterization of the offending telangiectases.

### American Journal of Ophthalmology, Chicago

**7:** 1-79 (Jan.) 1924

Decoloration of Superficial Layer of Iris. R. Cords, Cologne, Germany.—p. 1.
Isolated Favus of Eyelid. Report of Case. S. S. Greenbaum, Philadelphia.—p. 6.
New Astigmatic Chart. J. S. Friedenwald, Baltimore.—p. 8.
Associated Movements of Eyes; Their Nerve Centers, Conducting Paths, Production Varieties and Derangements. A. Duane, New York.—p. 16.
Orbital Edema in Exophthalmic Goiter. E. S. Thomson, New York.—p. 27.
Hereditary Cataract. A. L. Brown, Cincinnati.—p. 36.
Lipemia Retinalis; Effects of Insulin. W. F. Hardy, St. Louis.—p. 39.

### American Journal of Physiology, Baltimore

**67:** 219-443 (Jan. 1) 1924

*Physiologic Effects of Air Concussion. D. R. Hooker, Baltimore.—p. 219.
*Glucose Equivalent of Insulin in Depancreated Dogs. F. N. Allan, Toronto.—p. 275.
*Factors Producing Rapid Increase or Decrease in Number of Red and White Cells in Blood Stream. I. Acids and Bases. E. F. Bostrom, New York.—p. 291.
Antineuritic Value of Hog Muscles. R. Hoagland, Washington, D. C.—p. 300.
Vagus Apnea. W. J. Meek, Madison, Wis.—p. 309.
Physiology of Reproduction in Birds. XVI. Normal Blood Sugar of Pigeons and Its Relation to Age, Sex and Certain Diseases. O. Riddle and H. E. Honeywell, New York.—p. 317.
Id. XVII. Blood Sugar and Ovulation Under Inactivity or Close Confinement. O. Riddle and H. E. Honeywell, New York.—p. 333.
*Id. XVIII. Effects of Onset of Cold Weather on Blood Sugar and Ovulation Rate in Pigeons. O. Riddle and H. E. Honeywell, New York.—p. 337.
*Effect of Oral Administration of Alcohol on Blood Sugar of Rabbits. N. R. Blatherwick, L. C. Maxwell and M. L. Long, Santa Barbara, Calif.—p. 346.
*Relative Physiologic Value of Spectral Lights. IV. Visibility of Radiant Energy. H. Laurens, New Haven, Conn.—p. 348.
*Heat Regulation and Water Exchange. I. Effects of Hot and Cold Baths on Blood Concentration and Brain Volume in Dogs. H. G. Barbour, New Haven, Conn.—p. 366.
Id. II. Rôle of Water Content of Blood and Its Control by Central Nervous System. H. G. Barbour and E. Tolstoi, New Haven, Conn.—p. 378.
*Id. III. Effects of "Dry" and "Moist" Heat on Body Temperature and Blood Concentration of Dogs. E. Lozinsky, Montreal.—p. 388.
Id. IV. Influence of Ether in Dogs. H. G. Barbour and W. Bourne, Montreal.—p. 399.
Effects of Extreme Temperatures on Fish. S. W. Britton, St. Andrews, N. B.—p. 411.
*Study of Vasectomy on Rats and Guinea-Pigs. R. Oslund, Chicago.—p. 422.

**Physiologic Effects of Air Concussion.**—Frogs, rabbits, cats and dogs were exposed by Hooker to the atmospheric disturbances (air concussion) produced by the firing of large guns, a procedure which established a condition of "primary shock." Reasons are advanced to show that the effect is due to the duration of the phase of high atmospheric pressure rather than to the height of the atmospheric pressure as such or to the tonal vibrations of the atmosphere. The experiments are classified and the results and conclusions drawn from them are presented.

**Glucose Equivalent of Insulin.**—The glucose equivalent of insulin, that is, the number of grams of glucose which each unit can cause to be metabolized, determined by Allan, on two depancreated dogs fed with meal and cane sugar, was

found to vary with the dose given and with the amount of carbohydrate in the diet. When the carbohydrate ingestion is constant, the glucose equivalents per unit become progressively smaller as the dose is increased and an equation is given to show the relationship. When the amount of insulin injected is constant and the carbohydrate is increased, the glucose equivalent per unit of insulin is increased up to a certain limit beyond which it remains constant. The practical application of these facts in the clinical use of insulin is indicated.

**Effect of Acids and Bases on Blood Cells.**—This is a continuation of Bostrom's previous work. The injection of sodium bicarbonate is always followed by an increase of red as well as of white cells in the heart blood. The increase in this part of the circulation is accounted for by a decrease in the cutaneous vessels and in the liver and spleen parenchyma. The administration of acids has the opposite effect as far as the heart blood is concerned: the number of red and white cells are diminished. The cause of this is an accumulation of cells in the smaller vessels, either in the cutaneous area or in the parenchyma of internal organs, or both. Very often it seems to be a question of where the cells are first caught, that part of the circulation showing an increase, the others a decrease. The redistribution of the cells is attributed to a change in the adhesive power of the cells, alkalis causing this to become weaker, acids stronger.

**Effect of Cold Weather on Blood Sugar.**—Riddle and Honeywell assert that recent and prolonged exposure to out-of-door air of strong cooling power results in a marked lowering of the sugar concentration of the blood of pigeons. The same temperature conditions which effect a decrease in the blood sugar also diminish the rate of ovulation. Some facts suggest that a decrease of both blood sugar and ovulation rate is sometimes associated with a decreased and sometimes with an increased basal metabolism.

**Effect of Alcohol on Blood Sugar.**—The oral administration of alcohol to rabbits caused marked decreases in the blood sugar. There appears to be no absorption of insulin when large amounts are given in alcohol, in ice water and in 0.4 per cent. sodium carbonate solution.

**Visibility of Radiant Energy.**—The visibility of radiation, or the relation between light and radiant energy, has been determined by Laurens for the cones at various absolute intensities; for the more central rods at low illumination; and for the peripheral rods at moderate illumination. The measurements were made by the photometric methods of direct comparison and of flicker.

**Effect of Baths on Blood Concentration.**—Evidence obtained by Barbour and Tolstoi shows that concentration of the blood on exposure to cold occurs while the animal's temperature remains normal, or even rises, and, therefore, cannot be due to cooling of the actively circulating blood. Similarly, dilution of the blood in response to hot baths is most frequently seen precisely when the normal animal's temperature is most constant. The blood solids, on the other hand, remain most constant in "cord" and "brain" dogs, animals whose blood temperatures fluctuate the most violently of any. It seems difficult for the authors to avoid the conclusion that loss of heat regulation by operation is intimately connected with impairment of the water shifting mechanism. While not regarded as direct evidence, they believe that it is corroborative to find the logic of the situation satisfied from a teleologic point of view. For blood concentration, by hampering both peripheral blood flow and water loss, will protect the body either from losing or acquiring too much heat at decidedly cold and hot temperatures, respectively. Furthermore, the "moderately warm" environmental temperature range which approximates the temperature of the animal body and demands the greatest facilities for radiation presents precisely the condition in which dilution of the blood is found.

**Effect of Dry and Moist Heat on Blood.**—It is suggested by Lozinsky that the blood concentration observed in "moist" air temperatures above 33 C. and "dry" air temperature above 42 C. may be ascribed, in part, to a protective mechanism which drives water into the tissues, rather than merely to excessive blood dehydration. The only positive evidence for this, however, is that the tissues are not dehydrated simultaneously with the blood.

**Effect of Vasectomy on Testes.**—It was found by Oslund that when the testes resided in the scrotum following vasectomy no degeneration took place, but when the testes were retained in the abdominal cavity, with or without vasectomy, degenerations took place. Vasectomy, as such, then does not cause degeneration of the germinal epithelium. It is suggested that degeneration of the germinal epithelium is caused by a rise in temperature which may be either local or general in the body of the animal affected.

## Annals of Otology, Rhinology and Laryngology, St. Louis

**32**: 953-1276 (Dec.) 1923

Pathology of Labyrinth. J. S. Fraser, Edinburgh.—p. 953.
Adenoids Removed with Direct Vision Adenotome. I. D. Kelley, Jr., St. Louis.—p. 1053.
Case of Epithelioma of Esophagus. S. McCullagh, New York.—p. 1083.
Surgical Diathermy by Needle Method. A. Lewy, Chicago.—p. 1086.
Fatalities Following Operations on Nose and Throat. H. W. Loeb, St. Louis.—p. 1103.
Anatomy of Sphenoid Fissure. G. Sluder, St. Louis.—p. 1108.
Deafness as Sequel to Mumps. G. H. Willcutt, San Francisco.—p. 1121.
Congenital Atresia of Postnasal Orifices. J. E. Lebensohn, Chicago.—p. 1128.
Nontraumatic Hernia of Diaphragm. An Embryologic Viewpoint. L. G. Richards, Boston.—p. 1145.
Radical Operations on Maxillary Sinus and Damage to Teeth. R. H. Ivy, Philadelphia.—p. 1197.
Otitic Cholesteatomata. S. MacC. Smith, Philadelphia.—p. 1203.
Survey of Hay-Fever Question. O. J. Stein, Chicago.—p. 1214.
Brain Abscess of Otitic Origin in Left Temporo-Occipital Region with All Typical Symptoms; Operation; Recovery. A. Zebrowski, New York.—p. 1224.
General Effects of Local Anesthetics Administered as in Tonsillectomy. E. L. Ross, Chicago.—p. 1229.
Tumor of Carotid Gland with Stokes-Adams Syndrome. G. W. Boot, Chicago.—p. 1241.
Klebs-Loeffler Infection of Middle Ear and Mastoid. R. Webber, Waterbury, Conn.—p. 1246.

## Archives of Neurology and Psychiatry, Chicago

**11**: 1-112 (Jan.) 1924

*Study of Tumors Arising from Ependymal Cells. P. Bailey, Boston.—p. 1.
*Comparative Histopathology of Acute Anterior Poliomyelitis and Epidemic Encephalitis. G. B. Hassin, Chicago.—p. 28.
*Familial Muscular Dystrophy; Six Cases in One Family. H. P. Mills, Phoenix, Ariz.; T. H. Haines and Mina A. Sessions, New York.—p. 43.
*Metabolism in Epilepsy. I. Nonprotein Nitrogenous Constituents of Blood. W. G. Lennox, Marie F. O'Connor, Boston, and L. H. Wright, Palmer, Mass.—p. 54.
Ambulatory Encephalitis. L. Grimberg, New York.—p. 64.
*Constitutional Psychoses Ending in Permanent Recovery. A. J. Rosanoff, Los Angeles and G. W. Bergman, Canton, N. Y.—p. 70
Tumor of Cauda Equina with Froin Syndrome E. M. Hammes, St. Paul.—p. 82.
Conclusive Seizures in Soldiers. A. J. Ostheimer, Philadelphia.—p. 84.

**Tumors Arising from Ependymal Cells.**—In a series of 868 consecutive verified intracranial tumors, observed in the clinic of Dr. Harvey Cushing, Bailey has been able to find six which seem to have arisen from ependymal cells, four from the ependymal floor of the fourth ventricle, and two from the velum medullare posterius (tela chorioidea ventriculi quarti). The tumor is composed of a mosaic of polygonal cells with well defined cell borders and heavy, coarsely granular cytoplasm. The cells are crowded against each other, and have a single, large and vesicular nucleus. Among them may be seen a few coarse fibrils which stain poorly with methods for the demonstration of neuroglia fibrils. In certain areas the fibrils may be seen to be the continuation of one extremity of the cells. In these areas the cells are apt to have a tendency to arrange themselves radially around blood vessels or around channels empty except for a protein coagulum. The blood vessels are broad channels whose walls contain a little poorly developed, often hyalinized connective tissue. No other connective tissue is present. In practically all the cells (probably all if the entire cell were included in the section) is to be seen a clear area containing sometimes one, usually two or three, rarely as many as a dozen small, clean-cut markings which stain heavily by methods for demonstrating neuroglia fibrils, and may be spherical or short bacillus-like rods. These markings have been interpreted as blepharoplasten, so typical of ependymal cells.

**Histopathology of Poliomyelitis and Encephalitis.**—Study of a case of acute anterior poliomyelitis (Landry's type) and of one of epidemic (lethargic) encephalitis have led Hassin to the conclusion that these two diseases also differ from each other histologically; that in spite of the close similarity in the localization and the gross character of the lesion each possesses more or less specific features.

**Familial Muscular Dystrophy.**—Of the twelve persons in the family studied by Mills et al., five males and two females exhibited progressive muscular dystrophies, being in the order of birth, the second, third, eighth, ninth, tenth, eleventh and twelfth child. The oldest girl affected was the only pseudo-hypertrophic type among the six cases examined. Apparently a brother who died had a case of primary atrophy. The basal metabolism determinations of these six cases do not point clearly to either hyperfunction of the thyroid gland as the etiologic factors of muscular dystrophy. The findings in the cases studied varied from minus 22 per cent. to plus 10 per cent.

**Nonprotein Nitrogen in Blood in Epilepsy.**—In a large group of epileptic patients, examination of the blood for total nonprotein nitrogen, urea nitrogen, amino-acid nitrogen, uric acid and creatinin showed these constituents to be within the limits of normal.

**Constitutional Psychoses Ending in Recovery.**—Rosanoff and Bergman believe that one point is established by their material, limited as it is: current prognostic generalizations concerning recurrence, chronicity and deterioration in the constitutional psychoses, though no doubt valid for the majority of cases, are not valid for all. Permanent recovery undoubtedly occurs much more often than has been generally supposed. In a given case, especially when the onset is in the second or third decade of life, an unqualified prediction based on such generalizations is not justified.

## Colorado Medicine, Denver

**21:** 1-24 (Jan.) 1924

General Anesthesia and Anesthetist. R. L. Charles, Denver.—p. 3.
Management of Pharyngo-Esophageal Diverticula. P. P. Vinson, Rochester, Minn.—p. 6.
Borderline Conditions and Specialist. R. T. Frank, Denver.—p. 7.
Neurocirculatory Asthenia. A. P. Chadbourne, Denver.—p. 10.
Chronic Nephritis. W. S. Dennis, Denver.—p. 13.

## Boston Medical and Surgical Journal

**189:** 1011-1056 (Dec. 20) 1923

Present Status of Cesarean Section in Massachusetts. R. L. Denormandie, Boston.—p. 1011.
*Heart in Hypertension and in Nephritis. P. D. White, Boston.—p. 1015.
Medical Impressions of Philippine Islands. L. W. Smith, Boston.—p. 1018.
*Group Reactions to Schick Test. B. White, Boston.—p. 1026.
Vaginal Outlet Repair. W. C. Seelye, Worcester.—p. 1030.

**Hypertension, Cardiac Hypertrophy, Nephritis.**—White shows that hypertension, with or without nephritis, causes cardiac hypertrophy unless it is slight or transient. Dilatation and congestive failure may ensue when the myocardium is sufficiently fatigued or when coronary arteriosclerosis or the toxic effects of infection or uremia are superimposed. Nephritis may damage the heart through the secondary effect of its hypertension, causing hypertrophy, or through the direct effect of uremic poisoning.

**Group Reactions to Schick Test.**—The results following the use of the Schick test in Massachusetts show that slightly more than one half of the number of school children tested reacted positively, and that the proportion of susceptibles, both among school children and adults, is greater than that reported by Park and Zingher for New York City. They further show a wide variation in the susceptibility of different social groups, and also that past and present diphtheria incidence rates and the density of population further influence the proportion of diphtheria immunes in any given community. The data analyzed by White would seem to warrant the general statement that the percentage of positive reactors to the Schick test (susceptibles) in any given group varies inversely with the number of previous contacts with individuals infected with the diphtheria bacillus. Furthermore, it would seem that the Schick test is a valuable epidemiologic aid, because by considering the susceptibility or immunity to diphtheria of any group or community (as shown by the Schick test), in connection with its previous and present diphtheria history, it may be possible to predict and anticipate the future prevalence of this disease in the particular group or community studied.

**189:** 1057-1084 (Dec. 27) 1923

*Relation of Backache to Gynecology. W. P. Graves, Boston.—p. 1057.
Bone and Joint Causes of Low Back Pain. R. B. Osgood, Boston.—p. 1059.
*Psychoneurotic Backache. J. W. Courtney, Boston.—p. 1061.
Backache. C. Frothingham, Boston.—p. 1063.

**Relation of Backache to Gynecology.**—In young nulliparous women with uncomplicated retroflexion, an essential uterine backache may occur, the frequency of which is indeterminate, as such patients without symptoms do not usually come to examination. Graves is of the opinion, however, that backache, either menstrual or intermenstrual, or both, is the rule. The exact origin of the pain has not been explained, but he is inclined to believe that, in some cases at least, it lies in the uterine wall itself. The figures so far collected serve to prove an impression, Graves has long had, that in cases of marked prolapse the greater the descent of the uterus the less frequent the symptoms of tire and backache, those patients with complete procidentia suffering the least. This observation tends to relegate essential uterine backaches chiefly to retroflexion cases with little or no prolapse. In malposition cases with prolapse, backache, though very common, is secondary both in importance and in frequency to the symptoms of pelvic pressure and tire. The backache of patients with genital prolapse is for the most part referable to the tired condition of the patient. It may occur in patients with normal backs or it may represent the accentuation of strains due to orthopedic errors.

**Psychoneurotic Backache.**—Backaches or rachialgias of the nervously adynamic, in Courtney's opinion, spring not from ideas, but from pathogenic factors of a physical order. These pathogenic factors have a definite place in the category of disease mechanisms in general. The most scientific and logical method of combating the pernicious effects of these factors is through agents which tend to better the physical structure and stabilize the functional activities of the neuroglandular mechanism of organic life.

## Journal of Infectious Diseases, Chicago

**34:** 1-104 (Jan.) 1924

*Typhus Virus in Louse. F. Breinl, Prague.—p. 1.
Action of Typhoid Bacillus on Russell's Double Sugar Medium. G. W. Wheeler, New York.—p. 13.
*Streptococci of Souring Milk. Streptococcus Lactis. IX. S. H. Ayers, W. T. Johnson, Jr., and C. S. Mudge, Washington, D. C.—p. 29.
Relation of Streptococcus Fecalis to Streptococcus Lactis. X. S. H. Ayers and W. T. Johnson, Jr., Washington, D. C.—p. 49.
Inoculation of White Mice with Pfeiffer's Bacillus. Influenza Studies XV. N. P. Hudson, Chicago.—p. 54.
*Growth and Biochemical Activities of B. Botulinus, B. Sporogenes and B. Tetani. Chemical Behavior of B. Botulinus Type C. Metabolism of Anaerobic Bacteria. I. E. Wagner, C. C. Dozier and K. F. Meyer, San Francisco.—p. 63.
*Effect of Glucose on Biochemical Activities, Including Growth and Toxin Production of B. Botulinus. II. C. C. Dozier, E. Wagner and K. F. Meyer, San Francisco.—p. 85.
*Hydrogen-Ion Studies. X. Preparation of Dry Powder with "Amboceptor" Properties. E. F. Hirsch and E. R. LeCount, Chicago.—p. 103.

**Studies on Typhus Virus.**—With Weigl's method of injection Breinl was able to pass the typhus virus from louse to louse repeatedly. The course of the disease after injection of emulsified louse intestines differs from that after injection with virulent guinea-pig brain. Production of agglutinin and active immunity can be obtained in the rabbit by injecting emulsified louse intestines, to which phenol has been added. Guinea-pigs can be immunized also by repeated treatment with dead louse virus. The peculiarities of the infection following the injection of the louse virus are explained by the coexistence of dead and living virus. The typhus virus multiplies considerably within the louse, but does not become more virulent. Ten days after infection the intestines of a louse contain 100 doses of living virus. The body of the louse contains only small quantities of virus after the intestines have been removed. Lice fed on a patient one day

after the fever had disappeared proved to be infectious seven days later. It is possible to infect lice with an emulsion of virulent guinea-pig brain.

**Streptococci of Souring Milk.**—The predominating streptococcus flora of souring milk was studied by Ayers, Johnson and Mudge. *Streptococcus kefir* predominated in milk of low acidity and *Streptococcus lactis* in milk of high acidity. *Streptococcus kefir*, by the ordinary cultural tests, appears to be like *Streptococcus bovis*, the typical streptococcus of cow feces. However, it can be readily distinguished from the cow fecal streptococcus.

**Determining Bacterial Proteolysis.**—It is believed by Wagner, Dozier and Meyer that successive nonprotein nitrogen determinations are the best means available for determining bacterial proteolysis. Such determinations have shown *Bacillus botulinus, B. sporogenes* and *B. tetani* to be equally proteolytic when grown on peptic digest-beef heart mince.

**Effect of Glucose on Toxin Production of Bacillus Botulinus.**—Under the conditions of the experiment made by Dozier, Wagner and Meyer, the presence of glucose did not exert any effect on the production of toxin by *Bacillus botulinus*. These results are in harmony with the suggestion that the toxin is an autolytic product.

**Dry "Amboceptor."**—Sheep cell hemolysin (amboceptor) may be prepared as a solid according to a method outlined by Hirsch and LeCount. The amboceptor so prepared is a protein-acid salt, soluble in water, forming a liquid with an acid reaction. This liquid, made neutral to litmus with a small amount of tenth normal sodium hydroxid, is hemolytic in high dilutions for sheep cells in the presence of complement.

## Medical Journal and Record, New York

**119**: 1-68 (Jan. 2) 1924

Therapeutic Dietetics on Endocrinologic Lines with Vitamine C as Homologue of Adrenin. C. E. deM. Sajous, Philadelphia.—p. 1.
Pluriglandular Therapy. I. G. Cobb, London.—p. 6.
Case of Exophthalmic Goiter and Diabetes Mellitus. J. A. Buchanan, Pueblo, Colo.—p. 11.
Endocrine Glands and Immunity. M. Uzan, Paris, France.—p. 15.
Analysis of Fifty-Two Goiter Cases; Treatment Employed in Different Types. J. W. Hinton, New York.—p. 18.
Hereditary Phenomena; Scrofula and Its Relationships to Endocrinology. L. H. Werdisheim, Graz, Steiermark, Germany.—p. 21.
Anxiety State and Endocrine Disturbance. E. Snowden, London.—p. 23.
Asthenocoria, New Sign of Suprarenal Insufficiency. C. F. Arroyo, Tampa, Fla.—p. 25.
Gonads of Women from an Endocrine Viewpoint. J. N. Baldwin, New York.—p. 27.
Rôle of Endocrines in Growth and Nutrition of Children. H. Goldstein, New York.—p. 29.
Ovarian Feeding. J. Rogers, New York.—p. 32.
Exophthalmic Goiter Without Exophthalmos and Goiter. I. Bram, Philadelphia.—p. 33.
Endocrinologic Aspect of Dermatology. S. Feldman, New York.—p. 35.
Acromegaly Associated with Suprarenal Tumor. H. W. Long and J. W. Gray, Newark, N. J.—p. 38.
Dr. Maynwaringe's Idea of Infectivity of Phthisis in 1673. G. A. Stephens, Swansea, Wales.—p. 40.

## Michigan State Medical Society Journal, Grand Rapids

**23**: 1-36 (Jan.) 1924

Impressions of European Proctology. L. J. Hirschman, Detroit.—p. 1.
Value of Enterostomy. C. D. Brooks and W. R. Clinton, Detroit.—p. 3.
*Case of Henoch's Purpura. W. C. C. Cole, Detroit.—p. 4.
Treatment of Acute Vomiting in Infants and Children. D. J. Levy, Detroit.—p. 6.
Acrodynia. S. D. Giffen, Toledo, Ohio.—p. 8.
Menstruation and Its Disorders at Puberty and Early Adolescence. G. M. Brown, Bay City, Mich.—p. 15.
Acute Traumatic Injuries of Brain. H. E. Randall, Flint, Mich.—p. 20.
*Case of Diabetes Mellitus in Child Treated with Insulin. J. C. Montgomery, Detroit, Mich.—p. 23.

**Henoch's Purpura and Erythema.**—An attack of pericarditis and blotchy erythema, observed from time to time, Cole regards as early manifestations of Henoch's purpura. The patient was 4½ years of age. He is receiving no treatment, gets a full diet, and is permitted moderate exercise.

**Insulin in Diabetes.**—The case presented by Montgomery illustrates the usefulness of insulin in the treatment of diabetic acidosis and impending coma; the ease with which the downward progress of the disease is arrested and a gain in weight established, and the rapid increase in the amount of utilized carbohydrate.

## Northwest Medicine, Seattle

**22**: 425-472 (Dec.) 1923

Malignant Diseases of Colon. A. Sachs, Omaha.—p. 425.
Malignant Disease and Its Treatment by Roentgen Rays, Radium and Electrocoagulation. G. E. Pfahler, Philadelphia.—p. 432.
*Myoma Malignum of Colon. C. R. Scott, Twin Falls, Idaho.—p. 436.
*Spinal Metastasis of Hypernephroma. T. W. Buschmann, Seattle, Wash. —p. 439.
Prevention and Treatment of Simple Goiter. O. P. Kimball, Cleveland. —p. 442.
Toxic Goiter. T. M. Joyce, Portland.—p. 445.
Treatment of Goiter. T. B. Murphy, Tacoma.—p. 449.
Conservative Medical and Surgical Treatment of Goiter. J. C. Moore, Seattle.—p. 452.

**Malignant Myoma of Colon.**—Scott records a case of leiomyoma malignum, located primarily at the hepatic flexure of the colon, occurring in a boy, aged 16. Very acute pain in the right lower quadrant was the outstanding symptom. The boy had also vomited. His temperature was 99.6 F. The abdomen was opened. The appendix was swollen and congested, containing a facalith the size of a navy bean. It was removed. About two months after this first operation the boy returned to the hospital because of severe pain all over the abdomen much of the time since the appendectomy. Constipation had been increasingly obstinate, with relief from pain after free defecation. The lad had lost weight. Barium meal roentgenograms showed an obstruction at the hepatic flexure of the colon. There was no blood in the stools. The urine and blood count were negative. Operation revealed a tumor the size of a tennis ball in the wall of the colon at the hepatic flexure, with small metastatic tumors the size of a cherry in the mesentery, and free fluid. The patient's condition was not good, hence an anastomosis between the ileum and the transverse colon was done. The diagnosis of leiomyoma malignum was based on the similarity of the sections to a uterine fibroid, but with the cells larger and more richly nucleated. After more than a year of good health the patient began to have pain. At operation two large tumor masses were found fused together and involving the transverse colon and the ileum. There were also present in the intestinal wall and in the mesentery hundreds of small nodules as well as a few in the abdominal wall. The patient lived for some weeks and death was due primarily to intestinal obstruction. There was no bowel movement for thirteen days previous to death.

**Spinal Metastases of Hypernephroma.**—In Buschmann's case nephrectomy was done for a tumor of the left kidney, which proved to be a hypernephroma. The patient made an uneventful recovery from the operation but still complained bitterly of pain in the hips and legs. Death occurred about two months later. The necropsy disclosed a tumor mass involving the distal end of the left renal vein and artery, extending into the psoas muscle which involved the left obturator nerve. The mass was characteristic of hypernephroma. Secondary growths were also found in the bodies of the third and fourth lumbar vertebrae, with extension into the dura mater in different lengths, causing pressure on the cauda equina.

## Public Health Journal, Toronto

**14**: 531-578 (Dec.) 1923

Report of Public Health Committee on Reduction of Infant Mortality in London. H. W. Hill, Convener, England.—p. 542.
Incidence and Treatment of Venereal Disease in Ontario Reformatories. A. L. McKay, Toronto.—p. 557.
Wassermann Reaction. J. Gibbs, Vancouver, B. C.—p. 561.

## Surgery, Gynecology and Obstetrics, Philadelphia

**37**: 723-856 (Dec.) 1923

*Pediculated Polypoid Fibro-Adenoma of Stomach of Ball Valve Type, Causing an Unusual and Complex Syndrome. R. Matas, New Orleans.—p. 723.
Subperiosteal Resection of Long Bones in Osteomyelitis. H. L. Beye, Iowa City, Iowa.—p. 732.
*Duodenal Hernia. Misnomer. E. Andrews, Chicago.—p. 740.
Observations in One Hundred Seventy-Five Cases of Pyelonephritis. W. C. Stirling, Winston-Salem, N. C.—p. 751.
Unilateral Ureteral Injuries. L. Herman, Philadelphia.—p. 756.
*Transperitoneal Cervical Cesarean Section. L. E. Phaneuf, Boston.—p. 765.

Treatment of Cardiopaths in Pregnancy and Labor. W. C. Danforth, Evanston, Ill.—p. 774.
*Sacral Teratoma. G. D. Cutler, Boston.—p. 779.
*Enterocyst. Report of Case. J. E. Strode and E. A. Fenel, Honolulu, Hawaii.—p. 781.
*Congenital Cyst of Duodenum. Report of Case. O. S. Waugh, Winnipeg, Manitoba.—p. 785.
Congenital Hemimacroglossia, with Disturbance of Locomotor Apparatus of Side Opposite Lingual Lesion. J. N. Roy, Montreal, Canada.—p. 787.
*Changes of Pressure Inside Fetal Craniovertebral Cavity. B. Crothers, Boston.—p. 790.
Spinal and Cranial Injuries of Baby in Breech Deliveries. R. N. Pierson, New York.—p. 802.
Regional Anesthesia in Gynecology and Obstetrics. W. R. Meeker, Rochester.—p. 816.
New Apparatus for Blood Transfusion with Citrate Method. G. E. Cowles and H. W. Antz, New Haven, Conn.—p. 841.
*Treatment of Pruritus Vulvae. S. Wiener, New York.—p. 843.

**Symptoms Manifested by Ball Valve Tumor of Stomach.**—The symptoms in Matas' case were: periodic crises of intense epigastric pain, with shock, vomiting, melena (tarry stools) and profound secondary anemia. Transfusion gave complete relief and recovery followed extirpation of the tumor by gastrotomy.

**Duodenal Hernia a Congenital Anomaly.**—Andrews believes that duodenal hernia is a congenital anomaly due to imprisonment of the small intestine beneath the mesentery of the developing colon.

**Transperitoneal Cervical Cesarean Section.**—The transperitoneal cesarean section is endorsed by Phaneuf because it offers protection against septic peritonitis; there is practically no shock as the intestines are not handled; there is less bleeding; the mother has a much easier puerperium; there is better healing since the incision is in the cervix, the noncontractile part of the uterus; there is less danger of rupture in subsequent pregnancies and labor. An efficient test of labor may be given with safety. Phaneuf prefers the Hirst operation in doubtful cases, and the Kroenig or Beck operations in clean cases.

**Sacral Teratoma in New-Born Excised.**—Fifteen hours after the birth of the child, Cutler excised this tumor measuring 3 by 4 inches. The patient made an uneventful recovery from operation and has been followed up for over six months. Development has been normal.

**Enterocyst Causes Intestinal Obstruction.**—A diagnosis of intestinal obstruction with intussusception or a congenital abnormality for cause was made in this case cited by Strode and Fennel. Exploration in the cecal region revealed a round, cystic tumor about 1.5 by 1 cm. protruding from the anterior surface of the ileum, about 6 cm. proximal to the ileocecal junction. The cyst bearing area was resected and an end-to-end anastomosis performed. The patient died about five hours later.

**Enterocystoma of Duodenum.**—The case described by Waugh is classified as an enterocystoma, in its broadest sense, of the duodenum, probably of congenital origin.

**Intracranial Pressure Changes.**—The results of the imposition of force on the fetus during delivery are considered by Crothers from a neurologic and physiologic point of view.

**Injection of Procain in Pruritus Vulvae.**—Believing that the itching is due to an irritation of the nerve endings, and that the consequent scratching gives rise to a vicious circle of cause and effect which must be broken into to effect a cure, Wiener makes repeated infiltrations of the vulva with a 1 per cent. solution of procain. Eight cubic centimeters are used at one sitting, 4 c.c. being injected on either side of the vulva. No curative effect is attributed to the procain. Its purpose is merely to render the infiltration itself painless. The curative action is attributed rather to the mechanical effect of the infiltration, and could doubtless be achieved, though in a less painless way, with salt solution.

## Tennessee State Medical Association Journal, Nashville

**16:** 275-312 (Dec.) 1923

Differential Diagnosis of Acute Right Sided Abdominal Lesions. W. O. Floyd, Nashville.—p. 275.
Insulin in Treatment of Diabetes. W. T. DeSautelle, Knoxville.—p. 279.
Surgical Patient. J. L. McGehee, Memphis.—p. 285.
Complications and Sequelae of Cholecystitis. W. A. Bryan, Nashville.—p. 287.
Three Years' Experience with Radium. H. King, Nashville.—p. 292.
Acute Brain Injuries. H. H. Shoulders, Nashville.—p. 297.

## U. S. Naval Medical Bulletin, Washington, D. C.

**14:** 735-873 (Dec.) 1923

Functions of Naval Medical Personnel Serving in Field: Field Sanitary Measures. W. L. Mann.—p. 735.

## Virginia Medical Monthly, Richmond

**50:** 579-654 (Dec.) 1923

Surgical Studies in So-Called Functional Psychoses. J. W. Draper, New York.—p. 579.
New System of Dietetics (Nem) in Light of European Experience with Problem of Nutrition. S. Newman, Danville.—p. 583.
Diarrhea in Infants. St. Geo. T. Grinnan, Richmond.—p. 588.
*Use of Glucose Per Rectum in First Stage of Labor. M. P. Rucker, Richmond.—p. 590.
Chronic Occlusion of Duodenum in Visceroptosis; Twenty-Eight Cases. D. Vanderhoof and T. D. Davis, Richmond.—p. 591.
Metabolic Embolism; Report of Case. J. N. Upshur, Richmond.—p. 594.
Heart Block. J. M. Hutcheson, Richmond.—p. 597.
*Cranial Injuries. Hemorrhage and Economic Prognosis. G. T. Vaughan, Washington, D. C.—p. 601.
Relation of Focal Infection in Production of Ocular Disease. H. M. Langdon, Philadelphia.—p. 603.
Factors in Diagnosis of Pulmonary Tuberculosis. O. O. Ashworth, Richmond.—p. 607.
Spasmus Nutans. A. F. Robertson, Jr., Staunton.—p. 609.
Spinal Anesthesia. W. C. Stirling and C. S. Lawrence, Winston-Salem, N. C.—p. 611.
Case of Acute Mastoiditis Complicated by Facial Paralysis. Operation. Recovery. E. U. Wallerstein, Richmond.—p. 615.
Significance of Early Urologic Lesions. W. T. Gay, Suffolk.—p. 616.
*Case of Fracture of Elbow from Throwing Ball. C. M. Hazen, Richmond.—p. 618.
Nasal Ganglion Neuralgia. M. H. Hood, Portsmouth.—p. 620.
Circulation in Infections Other Than Endocarditis, Rheumatic Fever and Syphilis. F. R. Taylor, High Point, N. C.—p. 624.
Pleurisy. Etiology and Significance. L. F. Cosby, Abingdon.—p. 628.
Ocular Interpretations in Diagnosis of Systemic Disease. H. H. McGuire, Winchester.—p. 630.
Neglected Hygienic Measures in Treatment of Acute Infectious Diseases. S. B. Nickels, Clinchport.—p. 632.
Community Syphilis; Type Infection. J. J. Giesen, Radford.—p. 633.
Nonpulmonary Forms of Tuberculosis and Tuberculous Complications. H. R. Edwards, Richmond.—p. 635.
Physician's Sympathy Is Psychologic Remedy of Great Value in Treatment of Disease. W. J. Jones, Crozet.—p. 639.

**Glucose by Rectum Shortens First Stage of Labor.**—Rucker has used glucose in toxic and nontoxic cases at or near term, in which induction of labor was deemed advisable and has been impressed with the shortness of the first stage of labor as compared with previous similar cases in which glucose was not used. The patients finished their labors strong and refreshed. The glucose is administered in a 5 per cent. solution by the drop method.

**Injury of Cranium.**—The points of special interest in Vaughan's case were: (1) hemorrhage without fracture; (2) hemorrhage on the opposite side to that receiving the blow; (3) a long silent interval, five weeks, during which the blood was escaping and accumulating on the surface of the brain; (4) the difficulty in locating the lesion in the brain as there was no focal symptoms such as spasm, paralysis, choked disk or aphasia; (5) effect on earning capacity. There seems to be no deterioration in this respect and no complication so far.

**Fracture of Elbow from Throwing Ball.**—Hazen's case was one of fragmentation of internal condyle of humerus due to throwing a ball. The mechanism of injury is explained as being due to the pull on the attachments of flexors and pronator, not only by their own contraction but also as subjected to the whiplike effect of the whole movement of foot, knee, hip, the side-twist of body, the swing of shoulders, the bend of elbow, wrist and fingers.

## West Virginia Medical Journal, Huntington

**18:** 281-336 (Dec.) 1923

Operating Room Technic. H. H. Trout, Roanoke, Va.—p. 281.
Psychopathology and Mental Hygiene. J. G. Pettit, Weston.—p. 286.
Roentgenologist and Referring Physician; Their Relation. J. E. Harris, Winchester, Va.—p. 295.
Shock and Its Treatment. A. C. Rutherford, Welch.—p. 298.
Suppurative Parotitis. T. E. Vass, Bluefield.—p. 302.

## FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

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### British Journal of Medical Psychology, London

3: 267-358 (Dec.) 1923

Narcolepsy. C. Worster-Drought.—p. 267.
Psycho-Analytic Views on Some Characteristics of Early Infantile Thinking. K. Abraham.—p. 283.
Sex Differences, from Psycho-Analytic Point of View. S. S. Brierley.—p. 288.
War Anxiety Neurotic of Present Day: His "Dizzy Bouts" and Hallucinations. H. Somerville.—p. 309.
M. Coue's Theory and Practice of Auto-Suggestion. C. Moxon.—p. 320.

### British Journal of Experimental Pathology, London

4: 289-348 (Dec.) 1923

Standardization of Tuberculin. A. J. Eagleton and E. M. Baxter.—p. 289.
*Platelet-Count in Rats Suffering from Vitamin A Deficiency. S. P. Bedson and S. S. Zilva.—p. 305.
*Influence of Insulin on Formation of Glycogen. B. P. Babkin.—p. 310.
Complement Fixation in Streptococcal Infections. G. K. Stone.—p. 318.
*Cultural Characteristics Exhibited by Serologic Types of Meningococci. E. E. Atkin.—p. 325.
Thyroid Gland in Experimental Rickets. I. Murray.—p. 335.
Variations in Distribution of Carbon Dioxid, Chlorin and Calcium in Cells and Plasma of Blood in Tetany. E. W. H. Cruickshank.—p. 340.

**Blood in Vitamin A Deficiency.**—Bedson and Zilva confirm the observation of Cramer, Drew and Mottram as to the presence of "protoplasmic débris" in the blood of rats suffering from a vitamin A deficiency. They were unable to confirm the original observation of Cramer, Drew and Mottram that vitamin A deficiency in the rat is productive of a severe thrombopenia.

**Influence of Insulin on Glycogen Formation.**—Babkin's research showed that the glycogen content of the liver and skeletal muscles in well-nourished rabbits after administration of insulin is markedly lowered as compared with animals fed in the same way but without the injection of insulin. Insulin always lowers the sugar content of the blood even after subcutaneous or intravenous injection of very large doses of glucose (from 25 to 30 gm. in a rabbit weighing 2 or 3 kilograms). There is no pronounced accumulation of glycogen in the liver and skeletal muscles in rabbits which have received glucose and insulin simultaneously. Insulin has, apparently, no influence on the glycogen content of the heart.

**Cultural Characteristics of Meningococci.**—By cultivating meningococci on plates composed of a thick layer of trypsin-broth-pea-agar Atkin noted differences in the appearance of the colonies which correspond remarkably well with the broad division of meningococci into two main serologic groups. Viability tests on the same medium yield a somewhat similar grouping, except that strains of Type I are sharply marked off from all the others, including Type III, by their short life on this medium. It is suggested that these features may be employed to replace or supplement serologic differentiation.

### British Medical Journal, London

2: 1193-1240 (Dec. 22) 1923

*Hysteria and Neurasthenia. E. S. Reynolds.—p. 1193.
*Applications of Physiology to Medicine. III. Blood Pressure and Heart Action in Sleep and Dreams. J. A. MacWilliam.—p. 1196.
*Effects of Arsenobenzol Treatment of Syphilis on Liver Function. H. MacCormac and E. C. Dodds.—p. 1200.
*Insulin in Alcoholic Solution by Mouth. G. A. Harrison.—p. 1204.
Case of Malaria Arising in England. N. M. Goodman.—p. 1205.
Spontaneous Rupture of Lower Uterine Segment. D. S. Pracy.—p. 1205.
Operative Treatment of Osteo-arthritis. R. C. Elmslie.—p. 1206.
Acute Rickets in Late Childhood and Adolescence. E. L. Evans.—p. 1212.
Deformities of Os Calcis. T. H. Openshaw.—p. 1214.
Transverse (Supracondylar) Fracture of Lower End of Humerus. P. B. Roth.—p. 1215.
Treatment of Congenital Talipes Equino Varus. N. Dunn.—p. 1216.

**Traumatic Neurasthenia.**—Although after trauma the neurasthenia is due to molecular nerve change similar to those of an ordinary acquired neurasthenia from business worry which recovers perfectly in weeks or months, yet, Reynolds thinks that in cases of more severe injury due to falls from heights or injuries to the head, and also if the accident has been a very terrifying experience (such as being whirled round a revolving shaft), it is possible for the nervous molecular changes to be so intense that recovery never occurs, in spite of full compensation having been paid. The man is "never the same as he was," and occasionally passes into melancholia and sometimes commits suicide.

**Physiology of Sleep.**—The results obtained by MacWilliam lead him to the conclusion that in considering the subject of sleep one must deal with two distinct conditions which have strikingly different associations as far as nervous, circulatory, respiratory and other functions are concerned: (1) undisturbed or sound sleep, attended by lowering of blood pressure, heart and respiratory rates, etc., and (2) disturbed sleep, modified by reflex excitations, dreams, nightmare, etc., sometimes accompanied by extensive rises of blood pressure, increased heart action, changes in respiration and various reflex effects. The circulatory changes in disturbed sleep are sometimes very pronounced. Night is not always the time of rest and sleep. This conception, while true as regards undisturbed or sound sleep, has to be qualified by the consideration that night and sleep are occasionally the season of acute reflex and emotional disturbances which, in the peculiar conditions present, induce very pronounced effects on the circulatory system, throwing a formidable strain on its weak points. In this way the individual may, during the nocturnal period of assumed repose, be subjected to suddenly developed stresses far beyond what is involved in ordinary muscular exercise gradually initiated. Thus, hemorrhages, the onset of anginal attacks, and other disturbances in the night can readily be accounted for; also sudden death, probably due to ventricular fibrillation in most instances.

**Effect of Arsenic on Liver Function.**—The investigations made by MacCormac and Dodds show that the arsphenamin preparation used does not cause either immediate or late damage to hepatic tissue, except in a small proportion of cases.

**Effect of Alcohol Solution of Insulin.**—Harrison's observations suggest that oral administration of insulin in alcohol would be so uncertain and so expensive as to be of little or no therapeutic value in diabetes mellitus in man.

### Edinburgh Medical Journal

31: 1-64 (Jan.) 1924

Spirit of Leisure and Spirit of Work. J. W. Dawson.—p. 1.
Congenital High Scapula; Brevicollis. D. M. Greig.—p. 22.
Simple Ulcers of Jejunum and Ileum. K. P. Brown.—p. 45.

### Glasgow Medical Journal

100: 281-348 (Dec.) 1923

*Relationship of Jejunal Ulcer to Use of Unabsorbable Sutures. J. M. Renton.—p. 281.
*Disseminated Sclerosis. D. K. Adams.—p. 290.
*Certain Aspects of Experimental Transmission of Disseminated Sclerosis. J. W. S. Blacklock.—p. 298.
Early Ocular Manifestations of Disseminated Sclerosis. B. Riddell.—p. 302.
*Diabetes Mellitus: Treatment: Insulin. A. M. Crawford.—p. 311.

**Unabsorbable Sutures Cause Jejunal Ulcer.**—In a specimen examined by Renton, a heavy silk suture, obviously the Lembert suture, was protruding into the lumen of the bowel one year after a gastro-enterostomy was done. It was associated with a jejunal ulcer. In a second case a man had had a posterior gastro-enterostomy performed five years before, silk being used for the Lembert and chromic catgut for the inner suture. He remained well for four and a half years and then began to have symptoms suggestive of jejunal ulcer. At operation an ulcer was found in the efferent loop of the jejunum, slightly involving the gastrojejunal margin, but mainly in the jejunum. No suture was found, but the central part of the ulcer was just where the Lembert suture must have been. In a third case a gastro-enterostomy had been performed two years previously for duodenal ulcer. Pagenstecher's thread had been used for the Lembert, and chromic catgut for the inner suture. For the last six months the man had had symptoms suggestive of jejunal ulcer. At operation a small jejunal ulcer was found on the efferent

loop, situated a quarter inch from the opening, and not involving the gastro-jejunal margin. No trace of any suture could be found. With a view of determining the usual fate of an unabsorbable Lembert suture, a number of experimental gastro-enterostomies were performed on cats. These were the findings: an unabsorbable Lembert suture tends to work its way into the lumen of the bowel and, finally, be cast off completely, and during this process it is obviously a source of irritation and infection. This would appear to occur even when the mucosa has not been penetrated in the insertion of the suture, although when it has penetrated, this probably occurs more rapidly. In Renton's opinion, there is at least sufficient evidence of these unabsorbable sutures being a predisposing cause of jejunal ulcer to justify their discontinuance. Chromic sutures are perfectly efficient for the anastomosis, and with them complete and permanent healing is more certainly obtained.

**Colloidal Gold Reaction in Disseminated Sclerosis.**—Adams regards the colloidal gold reaction as of great value in the early recognition of disseminated sclerosis. Of forty-one cases tested, thirty-nine gave a positive reaction. The only other disease which shows an almost constantly positive reaction to colloidal gold is neurosyphilis. The treatment endorsed by Adams consists of the administration of potassium iodid, courses of mercurial inunction and repeated graduated injections of neo-arsphenamin. Initial drastic antisyphilitic treatment having been maintained for about two months, the patient is given small doses of Donovan's solution, thrice daily, during alternate fortnights, for six months. At the end of this period a short rest is allowed, and the whole process is then repeated. Subsequent treatment varies with the individual case, the general idea being that the patient be kept more or less under the influence of small doses of arsenic and mercury.

**Experimental Transmission of Disseminated Sclerosis.**—In Blacklock's investigation inoculations into animals of cerebrospinal fluid or blood from patients suffering from disseminated sclerosis, or of these fluids after passage through culture in Noguchi's medium have produced nervous symptoms in a little more than one third of the animals inoculated. Similar symptoms, though in a smaller proportion, have been produced in animals when injected with saline or glycerinated emulsions of the central nervous system of rabbits which have shown nervous symptoms after inoculation with material from human cases of the disease.

**Value of Insulin in Diabetes.**—Crawford emphasizes the fact that insulin does not cure diabetes. However, if diabetes is treated without the aid of insulin, benefit can only be obtained in many cases by a cruel and almost unbearable restriction of diet; whereas, with its aid, not only is the patient enabled to enjoy a more liberal and more pleasant dietary resulting in a general all-around improvement in physical fitness, but there is the hope that the strain on the islets may be so far relieved that they can develop their natural powers of regeneration with ultimate advantage to the patient.

## Journal of Oriental Medicine, Dairen, South Manchuria

**1**: 137-190 (Nov.) 1923

*Occurrence of Bacteriophage in Dysentery Feces of Children. T. Suzuki.—p. 137.
*Relation of Skin Tuberculosis to Blood Vessels. H. Yanagihara.—p. 141.
*Case of Eventration of Diaphragm of Infant. T. Suzuki.—p. 153.
Pathologic Change of Eyes in Spayed Rabbits. Y. Tasaka.—p. 157.
*Quantitative Determination by Micromethod of Acetone and β-Oxybutyric Acid in Urine. T. Narabayashi.—p. 159.
*Infant Scurvy. M. Miyake.—p. 163.
*Tubercular Meningitis Among Children in Dairen. J. Kaneko.—p. 169.
Distribution of Dysentery Bacillus in Children Affected with Dysentery. K. Tokuye and K. Hatai.—p. 171.
Content of Vitamin B. S. Tate.—p. 175.
Case of Complicated High Grade Malformation in a Guinea-Pig Embryo. T. Nishizuka and N. Ishikawa.—p. 178.
Case of Epithelium Being Accidentally Forced into Iris. Y. Tasaka.—p. 179.
Influence of Medicaments on Velocity in Sedimentation of Red Blood Corpuscles. S. Hara.—p. 181.
I. Factors Influencing Distribution and Incidence of Human Parasitic Worms. W. W. Cort.—p. 183.

**Bacteriophage in Dysentery Feces.**—Suzuki reports finding bacteriophage in the feces of children ill with dysentery in about 47 per cent. of the cases. After the second day of the disease this percentage was higher.

**Tuberculosis of Skin.**—The sensibility of the skin tissue against tubercle bacillus, the change in the blood vessel walls, the coagulability of the blood, and external irritation, Yanagihara says, all have some influence in causing and producing skin tuberculosis. Therefore, skin tuberculosis and tuberculid cannot be said to be entirely different diseases, the two being closely related to each other. Tuberculid, however, both clinically and histologically, has certain peculiar characteristics, and so it is necessary to differentiate tuberculid from ordinary skin tuberculosis.

**Eventration of Diaphragm.**—A girl, aged 7 months, was ill from what appeared to be pneumonia. Examination made by Suzuki showed the case to be a complication of grippal bronchitis with eventration of the diaphragm.

**Micromethod of Determining Acetone in Urine.**—Narabayashi has used both the Pincus and Lubin methods for the determination of acetone in the urine and has found them of value, the latter more so than the former.

**Infant Scurvy.**—Twenty-five cases have been studied by Miyake. In seventeen there was a history of disease in the family: consumption, 9 cases; asthma, 4 cases; neurologic diseases, 2 cases; psychic diseases, 2 cases. In twelve it was possible to trace physical defects and weaknesses in one or both parents. These defects included venereal diseases, cases of hard drinking (inebriates and polymortality). The youngest patient was an 8 months old infant and the oldest was aged 3½ years. In twenty-three cases the child lacked the proper development. Six patients had never received breast milk; twelve for only one month after birth, and only two for more than three months. By proper feeding with cow's milk, mother's milk and orange juice a cure was effected in every case.

**Tuberculous Meningitis Among Children.**—Kaneko analyzed sixty-six cases, most of which occurred between April and September. Fever was the initial symptom in fifty-one cases; cough in 23; headache in 11; vomiting in 10; constipation in 9; stupor and anorexia in 8 each. The Pirquet reaction gave 100 per cent. positive at the beginning; in the second period 61 per cent., and 20 per cent. in the last period. The globulin test of the spinal fluid was positive in all cases. In most cases the albumin was increased; the highest being 0.23 per cent. and the lowest, 0.0165 per cent. The small lymphocytes were generally increased to a high degree. The polymorphonuclears came next, and the relation of the large lymphocytes was as 2:1:0.2. Tubercle bacilli were positive in 70 per cent. In the beginning of the disease they were mostly negative, but in the second and last stages they were positive.

## Practitioner, London

**112**: 1-68 (Jan.) 1924

Problem of Cripple. R. Jones.—p. 1.
Pitfalls of Medical Practice. B. Bruce-Porter.—p. 13.
Light: Action on Skin and Therapeutic Value. J. M. H. MacLeod.—p. 24.
Recent Work on Diseases of Heart. C. W. Chapman.—p. 34.
Therapeutic Use of Oxygen. G. Bourne.—p. 43.
Leukorrhea. J. W. Burns.—p. 53.
*Mushroom Poisoning with Unusual Symptoms. G. C. Maguire.—p. 59.

**Mushroom Poisoning.**—Maguire's patient, aged 5, had very severe abdominal pain, and on the fifth day after eating the mushrooms a marked retraction of the head developed. The next day the patient complained of pain and loss of power in the right arm. In order to take any food, he had to lie prone. Tincture of belladonna was administered freely and within a week the boy was well.

## South African Medical Journal, Johannesburg

**19**: 99-140 (Nov.) 1923

*Bronchomoniliasis and Monilia Fungi in Sputum. A. Pijper.—p. 101.
Diabetes: Metabolism and Treatment. M. Blieden.—p. 111.

**Bronchomoniliasis.**—Pijper claims that monilia fungi can be found in the majority of sputums if looked for or if special

methods of cultivation are used. In the course of sixty-seven consecutive examinations of sputum, mostly undertaken to try and confirm a clinical diagnosis of pulmonary tuberculosis, Pijper demonstrated the presence of monilia fungi in thirty-six cases. He finds that the Unna-Pappenheim method for staining *Bacillus ducrey* answers very well for staining monilia. With this stain monilia elements become bright red, and so do any bacteria present, but all nuclei and blood cells become blue or green. Cultures of monilia were readily obtained in a medium prepared by adding tenth normal hydrochloric acid to ordinary broth until 3 drops of a 0.05 per cent. solution of crystal violet added to 5 c.c. of the preparation produce a definite blue color. Vaccine treatment of cases proved satisfactory in very few instances only.

## South African Medical Record, Cape Town

**21:** 533-556 (Dec.) 1923

Psychasthenia. F. H. Kooy.—p. 534.
Vagaries of Smallpox. H. A. Spencer.—p. 540.

## Annales de l'Institut Pasteur, Paris

**37:** 1001-1079 (Dec.) 1923

*Flocculation in Toxin-Antitoxin Mixtures. G. Ramon.—p. 1001.
*Virulence and Toxicity of Tubercle Bacilli. A. Borrel et al.—p. 1012.
Streptococcus of Strangles. Brocq-Rousseu et al.—p. 1034.
Aphthous Fever. D. Mezincescu et al.—p. 1057.
*Polyvalence of the Bacteriophage. Wolff and Janzen.—p. 1064.

**Flocculation in Toxin-Antitoxin Mixtures.**—Ramon mixed diphtheria toxin with decreasing amounts of antiserum. He found that the proportions in the tube in which the precipitation appeared first represented perfect neutralization of toxin with antitoxin. This method is a great saving of the animals which would otherwise be necessary for the determination of the antitoxin titer.

**Virulence and Toxicity of Tubercle Bacilli.**—Borrel, Boez and de Coulon confirm the possibility of increasing the lost virulence of strains of tubercle bacilli by passage in animals. The virulence and the production of tuberculin are not parallel. Preventive inoculations of guinea-pigs with dead bacilli failed completely. Inoculations with attenuated strains prolonged the life of the animals.

**Polyvalence of the Bacteriophage.**—Wolff and Janzen confirm the possible but not regular multiple virulence or polyvalence of bacteriophages. They were unable to discover any general law regulating it. Each strain of the bacteriophage seems to display individuality in this respect.

## Bulletin de l'Académie de Médecine, Paris

**90:** 607-634 (Dec. 27) 1923

*Infant Mortality in Tunis. Dinguizli.—p. 613.
*Treatment of Anemia. Normet.—p. 624.
Conservation of Preparations. Lutigneaux.—p. 627.
*Virulence and Susceptibility. B. Roussy.—p. 629.

**Infant Mortality in Tunis.**—Dinguizli describes the "care of infants" in Tunis. The umbilical cord is powdered with a mixture prepared from caraway seeds, spiders' webs, and earth from the Holy Places, or at least with the dust from a local sanctuary. The baby is so tightly bandaged that it cannot move. Especial care is taken to prevent it from contact with fresh air, light and water for seven days. It is kept during this time, together with the mother, behind three curtains. The mortality of infants under one year averages 24 per cent. among native Mohammedans. He proposes a training school for visiting nurses as the only remedy.

**Treatment of Anemia.**—Normet gives sodium citrate in treatment of anemias with high hemoglobin index. He makes six intravenous injections, at weekly intervals, using 2 cg. per kilogram of body weight (40-60 c.c. of a 3 per cent. solution). The method is unsuccessful in chlorosis and in secondary anemia with a low hemoglobin index.

**Virulence and Susceptibility.**—Roussy recalls his investigations on the importance of the resisting power of animals as opposed to the sole theory of the virulence of the microorganisms. As early as in 1889 he presented evidence to show that the resistance probably depends on substances of a ferment nature.

## Journal de Chirurgie, Paris

**22:** 503-630 (Dec.) 1923

*Hernia Through Gap in Transverse Mesocolon. P. Lombard.—p. 503.
*Intracardiac Injection of Epinephrin. D. Petit-Dutaillis.—p. 519.

**Hernia Through Gap in Transverse Mesocolon.**—Lombard reports a case in which the mesocolon was torn by a contusion but serious symptoms did not develop until the resulting hernia became strangulated. In twenty-eight cases of hernia of this type, only one person recovered of the three operated on during acute occlusion, but seven recovered of the eight with disturbances of a chronic character. In nine of the cases a coexistent or causal gastric or duodenal ulcer was known, and in eight cases the hernia was a necropsy surprise.

**Intracardiac Injection of Epinephrin in Operative Syncope.**—Petit Dutaillis is prosector at Paris, and he is enthusiastic as to the value of local injection of 1 or 2 c.c. of the 1:1,000 solution of epinephrin to revive the heart during collapse at operations. In twenty-five such cases published, permanent resuscitation was realized in 56 per cent. The list of successful cases includes three of white syncope under chloroform; the interval in the successful cases was not more than four or six minutes. The nerve centers will not tolerate an anemia of more than ten minutes at most. Especially instructive is Henschen's case in which a stab wound of the heart was being sutured and the heart action was stopping; the intracardiac injection revived the heart at once, and the operation was successfully concluded. He advocates introducing the long, fine needle in the fourth interspace, close to the margin of the fifth costal cartilage and close to the sternum, pointing the needle slightly toward the median line after the first 2-3 cm., thus injecting the fluid directly into the right ventricle. Necropsies and experiments on animals have demonstrated that the injury of the heart from the puncture is so slight as to be negligible. Artificial respiration and simple massage of the precordial region may be indispensable adjuvants. Some have given pituitary extract or strophanthin with the epinephrin, to prolong the action.

## Presse Médicale, Paris

**32:** 1-12 (Jan. 2) 1924

*Puericulture. Pinard.—p. 1.
*Local Immunization. Delater.—p. 3.

**Puericulture.**—Pinard considers the age of puberty, which must not be confused with marriageability, as the age when puericulture should start its work. The instinct of reproduction, which awakes at that time, is the only one which has not been touched so far by instruction and education. And yet it is necessary that every instinctive act of this nature should become the result of a conscious and well founded will. Every purely instinctive act lowers man down to and sometimes below the level of beasts. This conscious will must be enlightened by the knowledge of hygiene—by eugenics. Eclampsia can be prevented. The maternity of the breast must be taught still. Every mother has milk for her baby. Its amount may be insufficient at first, but it increases, even if this takes three or four months.

**Local Immunization.**—Delater believes that the local immunity of a receptive organ is the only true source of immunity. Humoral antibodies are not essential. Local application of the vaccines (smallpox, to the skin; typhoid and cholera, by ingestion, with bile) is the least dangerous and most efficient method of immunization. Excellent results have been obtained by application to the skin of dressings containing staphylococcus and streptococcus vaccines.

## Progrès Médical, Paris

625-670 (Dec. 5) 1923

Diphtheric Paralysis. J. Comby.—p. 625.
*Lesions of Gastric Nerves. M. Loeper and R. Turpin.—p. 626.
*Herpetic Meningitis. A. Philibert.—p. 631.
*Morvan's Disease. C. Achard.—p. 635.
Insulin in Treatment of Diabetic Children. Nobécourt.—p. 641.
Mediastinal Tumors. L. Ramond.—p. 645.
Cutaneous Drainage in Edema. E. Pallasse.—p. 654.
Bismuth Treatment of Syphilis. Lortat-Jacob and Béthoux.—p. 657.
Properties of Lipo-Vaccines. E. Le Moignic.—p. 662.
Quadricentennial of Medical Publisher. Tricot-Royer.—p. 664.

**Lesions of Gastric Nerves.**—Loeper and Turpin investigated the lesions of gastric nerves in various diseases of the stomach. The changes in the nerves in cases of callous ulcers extend far and account for the persistent pains. Cancer cells can propagate in the lymphatic spaces around the nerves. Some products of abnormal fermentation in cases of stenosis of the pylorus can penetrate along the nerves. Formaldehyd and chloroform, which may be present in such cases, can be found in the pneumogastric nerve and even in the medulla oblongata. Resection of gastric nerves has given good results to date.

**Herpetic Meningitis.**—Philibert observed a meningeal syndrome in a woman with herpes of the vulva which had been preceded by buccal herpes. The cerebrospinal fluid contained few lymphocytes, and the patient recovered. Herpes virus can cause also encephalitis. He discusses the question whether meningococci require an obligatory symbiosis with the virus of herpes before they can cause meningitis. It is also possible that pneumonia may be due to a similar primary localization of the herpes virus in the lung, and secondary invasion by pneumococci.

**Morvan's Disease.**—Achard discusses Morvan's disease (repeated destructive painless felons), and deals especially with the interesting history of classification of this syndrome as a form of syringomyelia.

## Revue de Chirurgie, Paris

**61:** 711-786, 1923

Contusion of the Pancreas. Mocquot and Costantini.—p. 711. Cont'n.
*Diagnosis of Latent Pott's Disease. C. Clavelin.—p. 749.

**Diagnosis of Latent Pott's Disease in Adults.**—Clavelin was amazed to find that of the forty ex-soldiers with Pott's disease sent to his service in 1922, a large proportion had been long treated on a mistaken basis, the tuberculous caries having escaped detection. To prevent such blunders, he devotes nearly forty pages to the differential diagnosis of Pott's disease in adults in time for treatment to ward off the classic triad of gibbus, paralysis and chronic abscess without which few seem to be able to recognize the disease, even with the aid of the roentgen rays. In 18 of 26 cases studied in detail, pain was the first symptom; in 2 it was suboccipital; in 2 cervical, and in one, dorsal. All of these patients had been long treated for "rheumatism," one for more than a year. In another dorsal case the treatment had been for "pleurisy." In 12 cases the lesion was low in the back, and 3 in this group had been treated for months for "sciatica"; the others in this group had local or girdle pains. In 6 of the 26 cases, a tuberculous abscess was the first symptom to attract attention; there had been no pain in 3, and in the others merely vague, transient pains. In one case (dorsal) the deformity of the spine was the first manifestation, and in one case (dorsal) an epileptiform convulsion was explained a year later by paralysis and other symptoms revealing the unsuspected tuberculous caries. The pains with Pott's disease in the adult persist or return after a period of calm, and they are always in the same region, aggravated by walking, fatigue and exertion, and relieved by reclining. Besides these four cardinal features of the pains, the facts that they are often but not always bilateral, and that they spread downward rather than upward are instructive. If with pain with these features, there is slight fever, the diagnosis of Pott's disease is practically certain. Contracture may be manifest only in a certain segment of the spine or in certain movements. The patient may hold his head abnormally, and turn his trunk rather than bend his neck. It is instructive to have him bend over, the chin against the sternum, and pick up an object from the floor with first one and then the other hand, and then with both, and then bend the trunk from side to side. The play of the spine can be studied further by having him lie prone on a table and raise himself on first one elbow and then the other, while the observer presses down the middle of the back. Any abnormal contracture may be a reflex defense against mobilization of the focus. With spondylitis, there is usually a history of some preceding typhoid or other acute disease, and the onset is more abrupt. Rhizomelic spondylosis begins with ankylosis of the hip joint or sacral region. Serodiagnostic measures are instructive only when negative.

## Revue Médicale de la Suisse Romande, Geneva

**43:** 777-856 (Dec.) 1923

*Underfeeding of Infants. L. Exchaquet.—p. 777.
Rupture of Symphysis Pubis in Delivery. C. Thélin.—p. 794.
*Prophylaxis of Skin Cancers. C. Du Bois.—p. 802.
Multiple Osteogenic Exostoses. P. Jomini.—p. 811.
Mitral Stenosis and Bilateral Hemiplegia. A. Cramer and A. Liengme.—p. 822.

**Dangers of Underfeeding of Healthy Infants.**—Exchaquet says that the underfeeding of healthy infants is due not only to poverty, so common since the war, but also to theoretical ideas of physicians, midwives or parents, and to a lack of knowledge of the signs of underfeeding in infants. In certain cases the milk production decreases, and a previously instituted limitation of the duration of the suckling causes underfeeding, especially with neglect to weigh the infant before and after feeding. The best daily intake is expressed by the formula: $\frac{\text{Weight}}{10} + 200$ gm. Artificially fed infants require 100 calories per kilogram in the first six months, and 80 calories by the ninth month. An underfed infant cries less than a normal one as he becomes weak rapidly, especially when very young. The only criterion of the quality of the milk is the child's development. Constipation is one of the most common symptoms of underfeeding. Another symptom is the slower increase or even decrease in weight. Diarrhea often replaces constipation. "Starvation vomitings" are also frequent. The quantity of liquid may also be insufficient. Lack of water causes anhydremia which entails serious blood modifications. The treatment of underfeeding, in breast-fed infants, should be the lengthening of the duration of each feeding, efforts to increase milk production, or mixed feeding. The underfed infant needs more nourishment than the normal infant of the same weight.

**Prophylaxis of Skin Cancers.**—Du Bois believes that cancers of the tongue and of the rectum are found almost exclusively in acquired or hereditary syphilis, while tumors of the breast and uterus seem to be exceptionally frequent in syphilitic women. When syphilis has disappeared, as it tends to do in Europe at least, there will be a progressive decrease of cancer. The first prophylactic measure is to avoid syphilis. Some epitheliomas follow skin affections which may be congenital. He found that 97 per cent. of 200 cases of skin epitheliomas were on the face, and he discovered the demodex in all adults over 20, but only in 75 per cent. of subjects between 15 and 20. It plays sometimes an active rôle in cancer formation. He noted epithelial changes where the parasite was embedded. Prophylaxis of precancer diseases should consist in watching moles carefully, and in hygiene of the skin to prevent follicular keratosis, vegetations and proliferations. We should combat acne in young people much more energetically than we do now. We inoculate children by the bad habit of rubbing our faces against theirs. The best parasiticides are xylene and banzin mixed with almond or other oil. He recommends against the demodex an ointment made with xylene, 5 gm.; benzin, 5 gm.; purified petroleum benzin, 5 gm.; wool fat, 10 gm.; white wax, 20 gm., and petrolatum, 40 gm.

## Schweizerische medizinische Wochenschrift, Basel

**53:** 1189-1208 (Dec. 27) 1923

*Encephalitis of Rabbits. R. Doerr and E. Zdansky.—p. 1189.
Respiration and Electrocardiogram. H. Ryser.—p. 1190.
*Acute Anterior Poliomyelitis. M. Dubois.—p. 1195. Begun, p. 1171.
*Epidemiology of Poliomyelitis. E. Schwarz.—p. 1202.

**Encephalitis of Rabbits.**—Doerr and Zdansky describe another case of a spontaneous infection of the brain of a rabbit.: This demonstrates anew how skeptical one should be in estimating the successful inoculations of human material in rabbits.

**Acute Anterior Poliomyelitis.**—Dubois reviews the clinical findings in the present epidemic of acute anterior poliomyelitis in Switzerland.

**Epidemiology of Poliomyelitis.**—Schwarz investigated the epidemiology of poliomyelitis. So far, direct and indirect personal contagion is the only certain mode of infection. In some cases it seemed that the disease had been transmitted through two healthy intermediate subjects.

## Chirurgia degli Organi di Movimento, Bologna

8: 1-212 (Dec.) 1923

*Routes of Migration of Abscesses in Pott's Disease. S. Vacchelli.—p. 1. Cont'd.
*Arthritis Deformans. G. Forni.—p. 87.
Isolated Fracture of Intervertebral Disk. M. Arcangeli.—p. 173.
*Infectious Myositis. A. Avoni.—p. 189.
*Fibula Shifted to Substitute Tibia. P. Fiori.—p. 207.

**Routes of Migration of Ossifluent Abscesses.**—This instalment of Vacchelli's study of gravitation abscesses in Pott's disease is accompanied with fifty-five illustrations.

**Arthritis Deformans.**—Forni remarks that although the pathology is well known, the views as to the pathogenesis of arthritis deformans are contradictory. His study of fourteen cases has disclosed a variety of factors that might be incriminated (congenital malformation, trauma, inflammation, etc.), injuring the cartilage as the primary lesion. This upsets the mechanics of the joint, and favors the development of the morbid process. When no changes in the joint can be adduced, the origin of the affection may be ascribed to some congenital anomaly in the joint, although the arthritis deformans may not develop until late in life. The prognosis of arthritis deformans of the hip joint has been much improved with recent progress in orthopedic-surgical treatment, as he demonstrates with ten successful cases (sixty-one illustrations). Two of the patients were children of 6 and 11; the ages of the others ranged from 22 to 61. Only one joint was affected, and the process was extremely slow in developing, never showing a tendency to spontaneous improvement. The hip joint or the first metatarsal-phalangeal joints were the only ones affected.

**Infectious Myositis.**—Avoni reports a case of a subacute inflammation of the rectus femoris from which the staphylococcus citreus was cultivated, with recovery after resection.

**Shifting Fibula to Substitute Tibia.**—Fiori has performed this operation in two cases and extols the results. The fibula grows larger and stronger, but in the second case, here described, the fibula fractured later, but the fracture soon healed. He ascribes the fracture to action of the muscles.

## Brazil-Medico, Rio de Janeiro

2: 325-338 (Dec. 1) 1923

*Syphilitic Radiculitis. O. Clark.—p. 325.
Classification of Heart Murmurs. J. Barbosa.—p. 326.

**Syphilitic Radiculitis.**—Clark remarks that syphilitic disease of spinal nerve roots is perhaps the most frequent of all causes for useless operations on a mistaken basis. In a recent case, the neuralgia in the right side of the trunk, below the ribs, was so agonizing that the man had lost 40 kg. in weight and clamored for an operation. The neuralgia disappeared in a week under treatment for syphilis, and in two months he had gained 20 kg. In another case, long rebellious sciatica subsided promptly under mercury and iodid. In still another case, the intense pains in the right lower part of the chest had not been modified by a recent course of neoarsphenamin, but yielded to bismuth treatment. The patient had a history of malaria, but quinin did not mitigate the neuralgia. There was nothing to suggest tabes except that the attacks of pain had appeared in the stomach on three occasions before they settled in the right side.

2: 339-350 (Dec. 8) 1923

Sixth Case of Rat-Bite Disease Published in Brazil. H. Paguer Fróes.—p. 339.
Sarcosporidiasis in Meat. G. Hasselmann.—p. 341.
Consequences for Mother and Fetus of Protracted Labor. O. Azambuja.—p. 341. Begun on p. 329.

2: 351-364 (Dec. 15) 1923

Puerperal Septicemia: Three Cases. O. de Souza.—p. 351.
*Syphilitic Chronic Nephritis. J. Barbosa.—p. 354.
Case of Progressive Myopathy in Man of 38. M. de Sant' Anna.—p. 355.

**Chronic Nephritis with High Blood Pressure.**—Barbosa entitles his article "Radical Cure," as recovery was prompt and complete under treatment for syphilis, although all the symptoms and signs had indicated irreparable degeneration of the kidney parenchyma. The patient was a man of 62, and his principal complaints had been of pains in the shoulder, worse at night, and constant dizziness.

## Prensa Médica Argentina, Buenos Aires

10: 505-528 (Dec. 20) 1923

*Anemia with Spinal Cord Changes. M. R. Castex, N. Romano and A. F. Camauer.—p. 505.
*Weak Circulation with Asthenia and Splanchnoptosis. Tulio Martini.—p. 512.
*Experimental Intravenous Anesthesia. F. L. Soler, R. Quesada Pacheco and E. Cabassi.—p. 516.

**Funicular Myelitis.**—The nervous symptoms in the woman, aged 43, did not fit into any of the classic types; they had developed during intense anemia, and paralleled the course of the anemia. The necropsy findings confirmed the assumption of funicular myelitis or leukomyelitis, the photomicrographs showing typical changes in all the less vascularized portions of the spinal cord.

**Defective Circulation with Visceroptosis.**—Martini states that in the examination of about a thousand patients in the last two years he encountered 108 presenting a combination of constitutional asthenia, sagging of the viscera and weak circulation. This triad occurred so often that he accepts some common cause for this condition, which he calls hyposphyxic asthenia-splanchnoptosis. In 92 per cent. of the cases the complaints were of disturbances in the digestive apparatus, usually in the stomach. Treatment must be addressed to each of the three elements in the triad, besides taking into account the frequent underlying inherited syphilis (forty-five in 108 cases), tuberculosis (twenty-six), or alcohol addiction. Repeated pregnancies and emotional strain seemed to be responsible in some cases, and a familial predisposition was sometimes evident.

**Intravenous Anesthesia for Experimental Research.**—Soler and his co-workers present evidence to show that the anesthetic solution, "chloral-morphin," injected intravenously for operative purposes, is promptly eliminated, long before the deficit symptoms from suprarenalectomy, for example, make their appearance (dogs). The effect is apparent in a few moments, and the action on the psychomotor zone persists into the second hour, the animals then rousing and becoming apparently normal and lively. The dose ranges from 3.5 to 12 c.c. of a 20 per cent. aqueous solution of chloral hydrate with 1 per cent. morphin hydrochlorid. The hypoexcitability of the brain cortex that follows suprarenalectomy thus cannot be ascribed to the anesthetic.

## Revista Española de Medicina y Cirugía, Barcelona

6: 681-742 (Dec.) 1923

*Quinidin for Complete Arrhythmia. D. Lorenzo Gironés.—p. 681.
Fluctuations in Viscosity of Blood. J. Cuatrecasas Arumí.—p. 684.
Cancer and Kala-Azar. J. Salvat Martí.—p. 690.
Recent Progress in Scarlet Fever. J. Salvat Martí.—p. 694.

**Quinidin for Complete Arrhythmia.**—The fine and permanent results obtained with small doses in the case reported were striking. On account of the degenerative myocarditis, with cardiac insufficiency, and complete arrhythmia of two months' standing, the quinidin was given very cautiously, but the arrhythmia subsided at the second injection. Only 3.6 gm. of the drug was given during the entire course of nearly a month, and there has been no return during the six months since.

## Semana Médica, Buenos Aires

2: 1329-1384 (Dec. 20) 1923

*Radium Needle Treatment in the Throat. L. Samengo.—p. 1329.
Tumor in Tuber Cinereum. M. Alurralde et al.—p. 1338.
Fracture of Lumbar Vertebrae. J. F. Merlo Gómez.—p. 1342.
Cyst Fluid Test for Echinococcosis. C. A. Videla.—p. 1345.
Organized Welfare Work for Weakly Children. M. H. Bortagaray.—p. 1348.
Emphysema After Measles. L. Goldemberg.—p. 1366.

**Radium Treatment in Otorhinolaryngology.**—Samengo gives twenty-two illustrations of his radium introducer, and its use in tumors in the throat, both for introducing the radium needle and for holding the suturing needle in all operations in the nose and throat. He extols the advantages of this *radioinmisor*. He says it is an improvement on his instrument, the "revolver for radium puncture."

2: 1385-1440 (Dec. 27) 1923

*Puerperal Infection. J. B. González.—p. 1385.
*Apparatus for Roentgen-Ray Examination. C. Heuser.—p. 1402.

*Dietl's Crisis. C. de Sanctis.—p. 1408.
The Fight Against Trachoma in Santa Fe. A. Magdalena.—p. 1413.
Chronic Vertebral Arthritis. O. E. Adorni.—p. 1415.
Pharmacodynamic Action of Alkaloids of Opium. M. Soto.—p. 1418.
*Phlorizin Test for Early Pregnancy. M. L. Pérez and A. M. Brea.—p. 1422.
*Vaccination of Young Children Against Tuberculosis. J. F. Vacarezza.—p. 1423.

**Puerperal Fever.**—González relates that 8 per cent. of the 598 deliveries at the Alvarez Hospital in 1920 were infected cases. He extols the effects of the routine treatment adopted. This was restricted to correcting anteversion of the uterus by manipulation through the abdominal wall—to produce conditions favorable for drainage of lochia—keeping the woman on her back for the same purpose, and application of ice to the abdomen to stimulate retraction of the uterus.

**Technic for Radiology.**—Heuser suspends the patient in a kind of hammock bag for roentgen-ray examination with or without insufflation of air. His various devices are described with ten illustrations.

**Dietl's Crisis.**—De Sanctis warns that this complication is liable to be mistaken for acute appendicitis or similar acute affection, as the pains, the nervous symptoms and the digestive disturbances are misleading. The attack may recur periodically and may last for a day or longer, or it may assume a syncopal form from reflex action from involvement of the solar plexus. In a recent case, the sudden and severe abdominal pains were ascribed to appendicitis and the (apparently sound) appendix was removed, with the subsidence of the pains. The movable kidney was then discovered. De Sanctis explains the benefit from the operation as due merely to the Trendelenburg position. This had allowed the kinked ureter to straighten out.

**Phlorizin Diagnosis of Early Pregnancy.**—Pérez and Brea now have a total of 116 women tested with phlorizin. The findings were positive in 84.81 per cent. of the women in the early months of a pregnancy, and negative in 95.05 per cent. of the nonpregnant women.

**Preventive Vaccination Against Tuberculosis.**—Vacarezza reports three years' experiences with Ferrán's antialpha vaccine against tuberculosis with which he treated the foundlings and other children under 3 years of age at the Casa de Expósitos—a total of 700. The mortality was 70 per cent. less than in the preceding corresponding period. No selection was made, and the children were given only 3 c.c. of the vaccine. He is anxious to continue the practice, remarking that it is the first time this vaccine has been tried on such an extensive scale at this age.

## Archiv für Gynäkologie, Berlin

**121:** 1-146, 1923

*Calcium Content of the Fetus. E. Schmitz.—p. 1.
"Spontaneous Cure of Tubal Pregnancy." L. Nürnberger.—p. 8.
Invagination of the Uterus. E. Vogt.—p. 28.
Histology of Menstruation. D. Sekiba.—p. 36.
*Incipient Osteomalacia. O. Burckhardt-Socin.—p. 61.
Folliculoma of Ovary. H. O. Neumann.—p. 69.
Traumatic Rupture of Uterus in Last Half of Pregnancy. E. Frey.—p. 92.
*Childbed Statistics. U. Franke.—p. 101.
Lutein Reaction and Menstruation. A. Greil.—p. 117.
Fibroma of the Clitoris. H. Attwenger.—p. 135.
Hemorrhage from Corpus Luteum. G. Kaboth.—p. 138.

**Calcium Content of the Fetus.**—Schmitz determined the calcium content in fetuses, calculated as calcium oxid. It is low in the first months (0.35 gm. at the end of the fourth month). Then it increases progressively to 28.6 gm. in the new-born. The daily increase in calcium oxid in the last month is almost 0.4 gm. Kehrer found in nephritis and in eclampsia a marked lowering of the blood calcium of the mother.

**Initial Stages of Osteomalacia.**—Burckhardt-Socin reports his experiences in twenty-eight cases of osteomalacia in the incipient stages, all since 1916. Some of these patients were men. Pain on pressure was constant at the symphysis, along the pubic arch, especially on its inner aspect, and on the spinous processes of the third to the eighth thoracic vertebrae and the sternum. Sitting is frequently painful on account of the sensitiveness of the tuberosities of the ischium.

**Obstetric Statistics.**—Franke publishes the statistics on childbed representing twenty-two years of experience at the Breslau Maternity (over 23,000 obstetric cases). There was no appreciable difference in the morbidity with any of the methods of disinfection of the hands. The women who were not examined internally had about the same percentage of slight fever as those who had been examined (around 30 per cent.), but a lower percentage of severe infections (7.12 against 10.1 per cent.).

## Deutsche medizinische Wochenschrift, Berlin

**49:** 1567-1574 (Dec. 28) 1923

Isolation of Ferments. M. Jacoby.—p. 1567.
*Colitis. H. Strauss.—p. 1568.
Disturbance of Orientation. L. Heine.—p. 1570.
*Reflex or Immunity Reaction? J. Schubert.—p. 1570.
Painless Removal of Warts. Dols.—p. 1572.

**Colitis.**—Strauss points out that the absence of mucus or pus in the feces does not necessarily exclude the possibility of a mucous or purulent colitis affecting the proximal parts of the colon. It is difficult to differentiate a painful colitis from spastic constipation. These two affections are frequently associated, and they form a vicious circle. Rough food is too often employed in cecal stasis. Strong laxatives are contraindicated. Liquid petrolatum and bitter salts are permissible. Carminatives should be tried in flatulence. Animal charcoal, in combination with magnesium salts in constipation or with calcium in diarrhea, prevents also meteorism. Enemas with a ten times diluted lime water are cleansing and mildly astringent.

**Reflex or Immunity Reaction?**—Schubert observed hippus and mydriasis while making intracutaneous injections. He found a parallelism between the leukopenia and the reaction of the pupils to the pain caused by the injection.

## Klinische Wochenschrift, Berlin

**2:** 2333-2364 (Dec. 24) 1923

*Resuscitation in Apparent Death. O. Bruns.—p. 2333.
*Insulin and Blood Ions. H. Staub et al.—p. 2337.
Eye Movements and Past-Pointing. Goldstein and Riese.—p. 2338.
*Fever Treatment of General Paralysis. P. Mühlens.—p. 2340.
Pathogenesis of Acute Roentgen and Radium Intoxication. A. Czepa and F. Högler.—p. 2341.
*Chondroitin-Sulphuric Acid in Serum. K. Dresel.—p. 2344.
"Gunshot Wounds." K. Meixner.—p. 2345.
*Typhoid Immunity. E. Friedberger and A. Cecchini.—p. 2345.
Acidity and Guanidin Poisoning. E. Bach.—p. 2347.
Benign Tumor of the Esophagus. T. Fahr.—p. 2347.
*Malignant Furuncle of the Lip. E. Roedelius.—p. 2348.
Constitution and Social Hygiene. Ascher.—p. 2353.

**Resuscitation in Apparent Death.**—Bruns considers with Puppe all the so-called primary signs of death as uncertain. Every seemingly dead person should be treated with measures for resuscitation until cadaveric rigidity is evident or death spots appear. Restoring the circulation is a very important factor and massage of the heart should be used. His experiments have demonstrated that artificial respiration with the pulmotor or the methods of Schäfer and Howard does not contribute to the evacuation of the heart. The Silvester method and especially Fries' Inhabad apparatus are better.

**Insulin and Blood Ions.**—Staub, Günther and Fröhlich found after an injection of insulin a marked decrease in the inorganic phosphorus in the blood. The sodium, potassium and magnesium concentration increased. The changes obtained in a case of diabetic coma were along the same lines but more intense than in a healthy dog.

**Fever Treatment of General Paralysis.**—Mühlens advises how to avoid danger in the treatment of general paralysis with malaria and recurrens. The treatment should be applied exclusively in hospitals, which are free from anopheles and from lice and bedbugs respectively. Before infecting the patient with malaria, his quinin tolerance must be tested. Only positively identified pure tertian strains should be used and the blood should be examined daily by an expert. Tropica is transmitted frequently from a supposedly pure tertian case. If the infection is too strong, quinin should be given.

**Chondroitin-Sulphuric Acid in Serum.**—Dresel found chondroitin-sulphuric acid in the blood of patients suffering

from amyloidosis and lipoid nephrosis. He believes that this is due to retention of the substance by the kidneys.

**Typhoid Immunity.**—Friedberger and Cecchini were able to protect guinea-pigs against lethal doses of typhoid bacilli by injecting them with organs containing the "passage virus." This virus was obtained by inoculating guinea-pigs with the brain of a subject who had died from typhoid. After successive passages in guinea-pigs, the bacilli could no longer be cultivated and were not visible. Nevertheless inoculations with organs containing this invisible virus produce fever, induce the formation of agglutinins against typhoid and protect against infection.

**Malignant Furuncle of the Lip.**—Roedelius had a mortality of 11 per cent. among his 218 patients with furuncle of the upper lip. There was high temperature in the fatal cases—over 39.5 C. The cause of the malignancy lies in the richness of superficial veins and the movement of the muscles of expression. Treatment must be extremely conservative. Primary incision is out of the question. Even Bier's suction must be omitted. Excochleation must not be applied to remove the necrotic tissue. A dressing with an ointment or with alcohol, absolute rest (no chewing, no speaking) are essential.

## Medizinische Klinik, Berlin

**19**: 1509-1538 (Nov. 18) 1923

Insufflation of Tubes. H. Sellheim.—p. 1509.
*Tuberculosis of Kidneys. Löwenstein and Moritsch.—p. 1513.
*Treatment of General Paralysis. O. Pötzl.—p. 1515.
Spontaneous and Traumatic Pneumothorax. A. Deetjen.—p. 1519. Conc'n.
Hypertrophy and Atrophy of Prostate. G. Neugebauer.—p. 1522.
Perinephritis After Paratyphoid. E. Herzfeld.—p. 1525.
By-Effects of Syphilis Treatment. F. Pinkus.—p. 1527.
General Anesthesia in Olden Times. K. Scheele.—p. 1536.

**Tuberculosis of Kidneys.**—Löwenstein and Moritsch succeeded in producing tuberculous lesions in one kidney of guinea-pigs after subcutaneous injections of the germs, if they had infected the other kidney previously with tubercle bacilli. The kidneys of guinea-pigs are otherwise almost always resistant in a general infection. These experiments are another instance of the preference of tuberculosis for one whole system of organs (either bones, or skin, or lungs, or eyes).

**Treatment of General Paralysis.** — Pötzl found distinct improvement in the cerebrospinal fluid and general condition of patients inoculated with malaria (Wagner-Jauregg's method). He considers it as the best treatment available

**19**: 1657-1692 (Dec. 30) 1923

Vacuum Aspiration in Treatment of Empyema. Perthes.—p. 1657.
*Treatment of Angina Pectoris. M. Kappis.—p. 1658.
Amyloidosis. W. Freundlich.—p. 1662.
Perforation of Cavity into Pneumothorax. E. Weigeld.—p. 1664.
*Branchiogenous Glands and Tuberculosis. H. Hoffmann.—p. 1664.
Extreme Leukopenia. R. Bantz.—p. 1667.
Case of Colchicin Poisoning. Leibholz.—p. 1669.
Painless Labor. Haupt.—p. 1670.
*Drugs in Treatment of Heart Disease. C. Lewin.—p. 1671.
Meinicke's Reaction with Active Serum. K. Laubenheimer and J. Hämel.—p. 1672.
Roentgen Cure of Mice Cancer. K. Brandenburg.—p. 1674.
Occupational Injury Not Responsible for Hernia. H. Engel.—p. 1675.
Survey on Ophthalmology. Adam.—p. 1677.
Survey on Rhinolaryngology. Haenlein.—p. 1678.

**Treatment of Angina Pectoris.**—Kappis reviews the results of neurectomy of the cervical sympathetic and of the depressor nerve in angina pectoris. All the different methods had good results, but in one of his patients the attacks returned four months later notwithstanding that the whole of the left cervical sympathetic and of the first thoracic ganglion had been resected. Only the pains in the left arm subsided entirely. The operation had been suggested in 1899 by François Frank, and was first performed in angina pectoris by Jonnesco in 1916.

**Branchiogenous Glands and Tuberculosis.**—Hoffmann deals with the relations of the thyroid and the parathyroids to the mineral metabolism in tuberculosis.

**Drugs in Treatment of Heart Disease.**—Lewin agrees with those authors who attribute the failure of digitalis in aortic insufficiency, emphysema and scoliosis to the absence of its action on the diastole. Squill is preferable in these conditions. Citron found that *Convallaria majalis* shortens the conduction time. It gives sometimes good results in functional disturbances in asthenics.

## Monatsschrift für Kinderheilkunde, Leipzig

**27**: 209-320 (Dec.) 1923

*Fate of the Prematurely Born. P. Brandt.—p. 209.
Biology of the New-Born. J. Duzár.—p. 222.
Spasm of Abdominal Muscles. F. Boxbüchen.—p. 231.
*"Umbilical Colic." F. Metis.—p. 236.
Dermatology in 1922. C. Leiner.—p. 243.

**Fate of the Prematurely Born.** — Brandt investigated the further development of 292 infants whose weight at birth was under 2,500 gm. and whose length was under 46 cm. Such prematurely born infants form about 10 per cent. of the deliveries in the training school for midwives at Oppeln. He traced 262 of these prematures to the age of 12 months; 42.3 per cent. had died by that time. Most of those surviving are physically or mentally below the average. Heat is the most important therapeutic agent for preservation of life in the prematurely born.

**Umbilical Colic.**—Metis examined twenty children who were suffering from repeated attacks of abdominal pain, mostly localized in the umbilical region ("umbilical colic"). Girls comprised 70 per cent. of the total. Three girls who presented an especially healthy aspect had occasionally vomited during the attacks. The number of leukocytes was normal. The differential count—which he considers very important—showed no "shifting to the left." All the children presented evidences of a neurotic temperament, and he attributes the pains to intestinal spasms. Appendicectomy was followed by an increase in the nervous symptoms in one case. Treatment by suggestion is most effectual.

## Zentralblatt für Chirurgie, Leipzig

**50**: 1629-1656 (Nov. 3) 1923

Simplification of Radical Treatment of Varicocele. Krause.—p. 1630.
The Whitehead Hemorrhoid Operation. A. Dzialoszynski.—p. 1630.
*Prevention of Postoperative Vomiting. Bohne.—p. 1632.
*Hot Air in Disinfection. K. Vogel.—p. 1632.
Operative Drainage of Lymph. G. Schmidt.—p. 1634.
Spontaneous Rupture of Leukemic Spleen. Hammesfahr.—p. 1634.
Own Blood Treatment of Carbuncle. Nourney.—p. 1636.

**Prevention of Postoperative Vomiting.**—Bohne sprays the mouth and nose of the still unconscious patient, as soon as he is returned to his bed, using an ordinary inhalation apparatus, and physiologic sodium chlorid solution for the spray. He thinks it hastens the removal of the anesthetic from the lungs; there was no postoperative vomiting in the twenty-five cases thus treated.

**Hot Air in Disinfection.**—Vogel claims priority (1905) for the method of treating the hands with superheated air preliminary to the alcohol and other chemical disinfection. The hand is held in the hot air box for an hour daily. It not only sweats freely, but the tissues seem to soften and the hyperemia improves the circulation. He also advocates this, as a preliminary to operations, for the patient himself, especially before orthopedic and plastic operations. The benefit is particularly striking in operations on the hands of laboring men.

**50**: 1685-1744 (Nov. 17) 1923

*Periarterial Sympathectomy. E. Kreuter.—p. 1685.
*Collodion Treatment of Cutaneous Angiomas. H. Krüger.—p. 1687.
Apparatus for Wire Traction. W. Block.—p. 1688.
Corrections of Rachitic Curvature. H. Strausz.—p. 1692.
Fracture of Clavicle. O. Langemak.—p. 1693.
Mishaps with Local Anesthesia. J. Becker.—p. 1695.
"Bacteriology of Healing Wounds." W. Grossmann.—p. 1696.
Trypaflavin in Sepsis and Local Inflammation. Lengemann.—p. 1698.
Aspermia with Undescended Testis. E. Glass.—p. 1699.
Subserous Cholecystectomy. H. Nieden.—p. 1700.

**Partial Periarterial Sympathectomy.**—Kreuter now removes only part of the adventitia from the segment of the artery when there is severe sclerosis. In this condition the circulation in the wall of the vessel is too defective to be relied on for nourishment. Before he made this rule, he had a case in which gangrene developed in the exposed segment, and proved fatal, notwithstanding amputation of the thigh. The periarterial sympathectomy had been done for gangrene of one toe.

**Collodion Treatment of Angiomas.**—Krüger calls attention to the successful obliteration of angiomas in the skin by puncture and then applying a drop or two of collodion. As the collodion dries, it contracts, and exerts pressure on the tissues below, preventing the reaccumulation of blood. A female infant studded with angiomas on face, trunk and limbs, some as large as a fingernail, was given this collodion treatment. The parents continued to apply the drop of collodion every two or three days, and by the age of 6 months all the angiomas had vanished without leaving a trace.

**50:** 1745-1804 (Dec. 1) 1923

*Operative Correction of Rachitic Curvature. B. Martin.—p. 1746.
*Malignant Furuncles on the Face. M. Friedemann.—p. 1748.
Operative Treatment of Stab Wound of Lateral Ventricle. Schmidt. —p. 1750.
Obstruction of Common Bile Duct by Echinococcus. K. Bachlechner. —p. 1753.
Enteral Cysts Inducing Ileus. E. Kratzeisen.—p. 1755.
Treatment of Pancreas Fistulas. C. Hammesfahr.—p. 1758.
Tibia Graft Fails to Heal. F. Hesse.—p. 1760.
Triple Fracture of Wrist. H. R. Schinz.—p. 1764.
Interposing the Dartos for Hydrocele. R. Ahrens.—p. 1768.

**Operative Correction of Rachitic Curvature.**—Martin gives an unfavorable report on the method of breaking up the curved bones of the leg into small pieces and reimplanting, as Löffler advocates. There was tardy and defective consolidation in one of his two cases, and fatal fat embolism in the other.

**Treatment of Malignant Furuncles on the Face.**—Friedemann has applied Bier's stasis hyperemia—a constricting band around the neck for twenty-two hours daily—in twenty-four cases, and was much gratified with the rapid healing, without disfigurement, in the eighteen cases free from sepsis, including one with complicating thrombosis of the cavernous sinus. Three recovered of the six with grave sepsis when first seen.

## Zentralblatt für Gynäkologie, Leipzig

**47:** 1657-1684 (Oct. 27) 1923

Air and Gas Embolism During Childbirth. W. Koerting.—p. 1657.
*Vagotonia as Symptom of Pregnancy. N. Louros.—p. 1667.
Pathogenesis of Corpus Luteum Cysts. E. Vogt.—p. 1677.

**Vagotonia as a Feature of Pregnancy.**—Louros presents evidence to prove that the high blood pressure in pregnancy, as well as in eclampsia, is the work of some mysterious excitation of the involuntary nervous system from the pregnancy process. In thirty-eight pregnant women tested month by month, he found that injections of epinephrin induced in thirty-two the vagotonic blood pressure curve, as described by Dresel; in six, the curve was of the sympathicotonic type. The vagotonia was more marked as term approached, and was most pronounced in eclampsia.

**47:** 1741-1800 (Nov. 17) 1923

Duration of Pregnancy. S. Peller and F. Bass.—p. 1741.
Epithelial Cells Simulating Spermatozoa in Cervix Glands. W. Niederehe.—p. 1747.
*Infection of Nursing Child from Mother's Mastitis. H. Runge. —p. 1748.
Insufflation of Fallopian Tubes. B. Ottow.—p. 1752. Idem. F. Engelmann.—p. 1760. Idem. A. Mandelstamm.—p. 1764.
Treatment of Eclampsia. P. Zweifel.—p. 1767.
"Rectum Sign of Expulsion of Placenta." A. Calmann.—p. 1768.
Pelvic Presentation from Flat Skull. B. von Lippmann.—p. 1770.
Obstetric Hematoma in Pelvis. F. Peyser.—p. 1774.
Intractable Vomiting of Pregnancy. F. Kirstein.—p. 1778.
Portable Aorta Compressor. J. Füth.—p. 1782.

**Infection of Nursling from Mother's Mastitis.**—Only one infant recovered in the five severe cases reported. Runge remarks that the streptococci must have been of an unusually virulent type in the series.

**47:** 1861-1920 (Dec. 15) 1923

*Hematuria After Roentgen and Radium Exposures. P. Schugt. p. 1862.
Treatment of Resected Ureters. G. A. Wagner.—p. 1868.
*Urinary Incontinence from Third Kidney. L. Schoenholz.—p. 1879.
Treatment of Incontinence of Urine. A. Mandelstamm.—p. 1889.
*Cause of Death in Cancer. E. Holzbach.—p. 1893.
Hexamethylenamin in Gynecology. E. Quack. —p. 1895.
Thrombosis of Renal Veins. S. Heller.—p. 1897.
Stalagmometry of Urine. A. Matusovszky and A. Laczka.—p. 1899.

**Hematuria After Roentgen and Radium Exposures.**—Schugt reports the history of a hysterical woman who continued to bleed after roentgen-ray castration. She was subjected to a new course of treatment with roentgen rays and radium. At last cystoscopic examination revealed a varix (or telangioma) in the bladder as source of the bleeding.

**Urinary Incontinence from Third Kidney.**—Schoenholz publishes the history of a girl, aged 19, who had undergone from early childhood numerous pedagogic and surgical attempts to cure her incontinence of urine. At last its cause was discovered in a third ureter which communicated with the vagina.

**Cause of Death in Cancer.**—Holzbach found in almost every case of necropsy of extensive cancers of the uterine cervix severe disturbances in the urinary apparatus. Dilatation of ureters, hydropyonephrosis, and subsequent uremia were the causes of death. He implants the ureters in the upper part of the bladder in every case of inoperable cancer of the cervix to give the women time to undergo irradiation treatment.

**47:** 1921-1969 (Dec. 29) 1923

*Aseptic Departments in Hospitals. A. Sippel.—p. 1921.
The Alexander-Adams Operation. A. Lehrnbecher.—p. 1923.

**Aseptic Stations.**—Sippel considers the establishment of stations destined exclusively for aseptic cases as an absolute necessity. Such a separation is required by science as well as by the conscience.

## Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

**1:** 1-104 (Jan. 5) 1924

*Heredity of Cancer. J. van Dam.—p. 4.
*Scarlet Fever Problems. D. Herderschée.—p. 19.
*A Rare Pigment in the Urine. J. Koopman.—p. 30.
Death of Univitelline Twin from Strangling with Cord. J. A. van Dongen.—p. 32.
Rash with Chickenpox. A. A. G. Land.—p. 34.
Practice of Medicine in 1860. A. J. van der Weyde.—pp. 36, 37, 38.

**Heredity in Cancer.**—Van Dam gives genealogic charts from 12 families traced for four or five generations, most of them showing numerous instances of malignant disease. Analysis of the charts reveals that the occurrence of cancer seems to be more familial than hereditary. In one family, for example, no cases of cancer were known in the first generation, but there were 15 in the second generation; 6 in the third—which had three or four times as many members as the second—and none in the fourth. This recessive character was evident in another family with 12 cases in the 30 members of the second generation, none in the third generation—with almost five times as many members—and none in the fourth. One surprising table gives the data from 15 families in which both husband and wife had cancer. Not one instance of malignant disease is known in their children although all but one of their total 46 children had reached the cancer age, 35, 40, 60, 70 or more. In contrast to these cancer charts, van Dam gives some charts of families free from cancer who intermarried with other cancer-free families and no malignant disease developed. Intermarriage with a cancer family was not followed by development of cancer with any regularity. The data have been compiled from a few villages in the Netherlands, including only the more numerous families.

**Scarlet Fever Problems.**—Herderschée remarks that the greater the practitioner's experience with scarlet fever, the more he mistrusts it. The mortality in the first week in the 1,000 cases of 1906 was 3.9 per cent., while it was only 1 per cent. in the 5,007 cases of 1915-1917. The mortality in 19 infant cases was 15.8 per cent., but there was no nephritis and only 5.3 per cent. otitis. In several hundreds up to 4 years old, the mortality dropped from 9 to 3.4 per cent., otitis from 17.2 to 13.6 per cent., while nephritis increased to 2.7 per cent. After this age, otitis declined to 2.2 per cent. at the age of 20, and nephritis averaged about 2.2 per cent. He warns to beware of rinsing out the ear in scarlatinal otitis, as this is liable to spread infection. He treats it dry for three days and then drops in a tepid mixture of equal parts of boric acid solution and glycerin, and the sixth day, 1 per cent. hydrogen dioxid. In 9.5 per cent. of the 378 otitis cases, a mastoid operation became necessary; 3 died, and 2 were left totally deaf. Incision may promptly relieve a child suffocating from

a scarlatinal retropharyngeal abscess, but on two occasions he saw an infant die suddenly in the nurse's arms when the abscess had been merely palpated.

**A Rare Pigment in the Urine.**—Koopman relates that the urine in the abdominal cancer case described turned a bright violet when boiled with strong hydrochloric acid (38 per cent.) and then treated with benzene. He never obtained this reaction with other urines, and could find nothing resembling it in the literature except Leube's account of one case in a woman with nephritis and osteomalacia, whose urine gave this violet reaction when treated in this way.

## Hospitalstidende, Copenhagen

**66:** 857-872 (Nov. 28) 1923

*The Dyspnea with Heart Disease. C. Sonne.—p. 857. Begun on p. 817.

**Cardiac Dyspnea.**—Sonne explains that in cardiac dyspnea the vital capacity is always subnormal; ventilation of the lungs and the acidity of the blood may be normal or above normal. These are secondary phenomena, depending on the extent of reduction of the vital capacity. The symptoms with cardiac dyspnea resemble closely the symptoms from lack of oxygen, and the symptoms in both of these conditions subside under ample intake of oxygen. Sonne knows of no research on the oxygen content of the blood in soldiers with irritable heart, but is confident that oxygen is the key to the problem. The stagnation of the blood in the lungs in heart disease reduces the elasticity of their walls; certain portions suffer more from this loss of elasticity than others. The consequence is an uneven ventilation of the lungs. Certain portions fail to get their normal quota of oxygen. Instead of the lungs filling up with air like an inflating balloon, the inflation proceeds by stages, as a Chinese lantern expands, segment by segment. The stasis and the increase in the amount of residual air weigh down the diaphragm, and this contributes to the reduction of the vital capacity, especially when the congestion in the organs below the diaphragm tends to hamper the functioning of the diaphragm still further. The ventilation of the upper part of the lungs may proceed unhampered or even be more effectual, while the base is scarcely ventilated at all. The blood in this region gets little or no oxygen, and the entire arterial blood suffers from this inadequate oxygenation. The excessive efforts made instinctively by the subject to overcome these conditions explain the dyspnea and secondary symptoms, and also explain the unusually large output of carbon dioxid often found in these subjects. Treatment with oxygen is logical, but no one can keep this up all the time, and a similar effect may possibly be realized by stimulation of the respiration center with camphor or similar stimulants or rebreathing the expired air. In severe attacks, morphin tranquilizes the heart, and the vicious circle may possibly be relieved. [This article was the lecture given by Sonne in the competition for the chair of internal medicine, the subject self-chosen.]

**66:** 889-904 (Dec. 12) 1923

*Acute Poliomyelitis. S. T. Sørensen.—p. 889. Begun on p. 873.

**Respiratory Disturbances in Epidemic Poliomyelitis.**—Sørensen states that the mortality in the ninety-two cases of epidemic poliomyelitis at the Blegdam Hospital 1905-1915, amounted to 6.5 per cent. Death was generally due to paralysis of the respiratory muscles, especially of the muscles involved in expiration. One young man overcame the suffocation from this cause by lying prone with his head hanging over the edge of the bed and a bolster under his abdomen. He repeated this from four to six times a day at first, and he recovered. Sørensen explains the respiratory paralysis as of bulbar origin in the majority, as also in some diphtheria cases analyzed to compare with these fatal cases of poliomyelitis.

**66:** 905-936 (Dec. 19) 1923

*Concretions in Urinary Passages in Children. L. Christensen.—p. 905.
*Neutrality in Children. A. Bisgaard and V. Askgaard.—p. 930.

**Concretions in the Urinary Passages in Children.**—Christensen emphasizes that it is far more dangerous to leave a urinary calculus in a child than to operate for its removal. He is convinced that such calculi are of more frequent occurrence than is recognized at present, as systematic microscopic examination of the urine and roentgenoscopy would reveal. He gives the details of sixteen cases. The latest was a boy of 8, brought to the hospital with the diagnosis of chronic nephritis, who proved to have a phosphate calculus in the kidney and one impacted in the ureter, but no nephritis. Hematuria was the first symptom. Ten of the sixteen patients were between 2 and 4 years of age. All were boys except three.

**Regulation of Neutrality in Children.**—Nineteen healthy children from nine families were tested by Hasselbalch's method of determining the regulation of neutrality. The findings show that regulation proceeds differently in children compared to adults. Bisgaard and Norvig have concluded that the parathyroid glands are responsible for abnormal regulation of the neutrality in adults, and it seems probable that these glands are concerned likewise in dysregulation in children.

**66:** 937-968 (Dec. 26) 1923

The Peptolytic Index in the Spinal Fluid in Tuberculous Meningitis. H. Jessen.—p. 937.
*Differential Diagnosis of Acute Poliomyelitis. S. T. Sørensen.—p. 948.

**Diagnosis of Acute Poliomyelitis.**—Sørensen gives the details of six cases in which myelitis or encephalitis simulated the clinical picture of epidemic poliomyelitis. In some other cases the disease was like that described by Strümpell as encephalitis, only that his patients were left with a cerebral defect while Sørensen's all recovered.

## Norsk Magazin for Lægevidenskaben, Christiania

**85:** 1-112 (Jan.) 1924

Sexual Hormones in Organotherapy. Mentz von Krogh.—p. 1.
Extrapleural Thoracoplasty. K. Haugseth.—p. 29.
*Research on Reflexes. G. H. Monrad-Krohn.—p. 31.
Case of Circumscribed Ossifying Myositis. C. Bull.—p. 43.
*Mass Intoxication from Exhaust Gas. F. Harbitz.—p. 47.
Traumatic Separation of Epiphysis of Head of Femur. Giertsen.—p. 53.

**Recent Progress in Our Knowledge of the Reflexes.**—Monrad-Krohn reviews the extensive field, commenting parenthetically on the sluggish course of the pathologic flexor and abdominal reflexes. He mentions a false Babinski reflex observed in a case of poliomyelitis, a peripherally induced inversion of the plantar reflex. The antagonist contraction is an open field for discussion still, but its importance for practical diagnosis is being recognized more and more.

**Poisoning from Exhaust Gas.**—Harbitz adds another instance of wholesale poisoning from exhaust gas to the number already published. Of a party of seven adults and six children on a pleasure trip in a motor boat, nine developed symptoms of carbon monoxid poisoning while all were sitting on the open deck back of the cabin, and the two who went to lie down in the cabin died. A leak in the "sound deadener" allowed the exhaust gas to escape and accumulate in the cabin. The high side walls back of the cabin helped to retain the escaping exhaust gas. The boat was 22 feet long by 8 wide and the door of the cabin stood open. A child, aged 7, was the first to feel the effect, in half an hour after starting. The fatalities and sickness were a mystery until necropsy revealed the carbon monoxid poisoning. Harbitz remarks that slight poisoning from exhaust gas is probably more common in garages and motor boats than we realize.

## Ugeskrift for Læger, Copenhagen

**85:** 953-968 (Dec. 27) 1923

*Test for Iron Eliminated in Stools. Folkmar and Ulrich.—p. 957.
Deranged Metabolism in Mental Disease. V. Askgaard.—p. 961.
Pig Bristles in Appendix. H. S. Bilmann.—p. 962.
Spontaneous Rupture of Gastroduodenal Artery. G. Starcke.—p. 963.

**Elimination of Iron in Stools.**—Folkmar and Ulrich give the serial findings in fourteen patients taking reduced iron. When the hemoglobin percentage showed no improvement under the iron, they found that from 68 to 83 per cent. was being eliminated unmodified. The percentage was 18 per cent. lower in those showing clinical benefit from the treatment. They determined the presence of the iron in the stools with a powerful magnet.